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ABSTRACT

The guidelines are written to assist school systems in establishing an environment for the safe and well-adapted functioning of children with chronic illness, physically disabling conditions, and medical dependency. The guidelines provide a basic structure for operations and suggested procedures intended to help schools and families as they develop individually customized programs. Section I contains administrative guidelines, outlining procedures for entrance of the child into an educational setting and describing universal precautions regarding safe handling of blood and body fluids, disposal of waste materials, and basic hygiene. Section II includes useful sample documents: a Health Care Plan, an Emergency Plan, a log sheet, and permission forms. Section III contains procedural guidelines for tube feeding, intravenous lines, catheterization, ostomy care, and respiratory care. Section IV contains skills checklists for training direct caregivers on such procedures as gastrostomy feeding, heparin lock flush, tracheostomy care, nasal/oral suctioning, and others. Includes over 100 references. (JDD)

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Children Assisted by Medical Technology in Educational Settings:

GUIDELINES FOR CARE

Marilynn Haynie, M.D.

Stephanie M. Porter, R.N.

Judith S. Palfrey, M.D.

Project School Care
The Children's Hospital, Boston
1989

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"Children are the future of our nation and we must assure that children with special health care needs have the fullest opportunity to participate in all aspects of American society."

C. Everett Koop, M.D.
Surgeon General
1987

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Illustrator: Marcia Williams

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Project School Care Guidelines Committee

Jane Buckley, M.Ed., Inpatient Principal, Kennedy Day School, Brighton, Massachusetts

Patricia Ciarleglio, R.N., School Nurse, Wellesley Middle School, Wellesley, Massachusetts

Mary Jo Dunleavy, R.N., B.S.N., Staff Nurse II, Myelodysplasia and Orthopaedic Program, The Children's Hospital, Boston, Massachusetts

Mary Horn, R.N., M.S., R.R.T., Pulmonary Clinical Nurse Specialist, The Children's Hospital, Boston

Kay Keeney, R.N., M.S.N., Coordinator, Continuing Care Department, The Children's Hospital, Boston

Judith McAuliffe, R.N., Former President of Massachusetts School Nurses, Pembroke

Lois Moore, R.N., Staff Nurse II, Otolaryngology Clinic, The Children's Hospital, Boston

Margaret Smith, R.N., M.S.N., Health Care Coordinator, Kennedy Day School, Brighton

Ann Tierney, R.N., M.S.N., Continuing Care Department, Franciscan Children's Hospital and Rehabilitation Center, Brighton

Barbara Weston, R.N., M.S.N., Clinical Nurse Specialist in Developmental Disabilities, Shriver Center, Waltham, Massachusetts

Project School Care Advisory Committee

Betsy Anderson, Chairperson, CAPP, Federation for Children with Special Needs, Boston

Anne Barrett-Dodwell, R.N., M.S.N., Director, Ambulatory and Community Nursing, The Children's Hospital, Boston

Jocelyn Bessette, R.N., P.N.P., Staff Nurse II, Hemophilia Clinic, The Children's Hospital, Boston

Patricia Blight, Parent, Billerica, Massachusetts

Richard Bourne, J.D., Senior Associate Counsel, Office of General Counsel, The Children's Hospital, Boston

Thoms Cohen, M.D., Pediatric Surgeon, University of Massachusetts Medical School & Teaching Hospital, Worcester

Allen Crocker, M.D., Director, Developmental Evaluation Clinic, The Children's Hospital, Boston

John Diggins, M.Ed., C.A.G.S., Senior Advisor, Guidance and Support Team Services, Boston Public Schools, Boston

Catherine Dunham, Director, Governor's Office of Human Resources, Boston

Louis Freedman, M.P.H., Director, Services for Handicapped Children, Massachusetts Department of Public Health, Boston

Richard Incerto, Ed.D., Director, Pupil-Personnel Services, Melrose, Massachusetts

Russell Latham, M.Ed., Director, Special Education, Dighton-Rehoboth, North Dighton, Massachusetts

Merritt Low, M.D., Ashfield, Massachusetts

Gerald Mazor, Ph.D., Executive Director, CASE Collaborative, Concord, Massachusetts

Nancy Miller, R.N., B.S.N., Former Director, National School Nurse Association, Acton, Massachusetts

Marie T. Mulkern, M.A., Director, Educational Services, Franciscan Children's Hospital and Rehabilitation Center, Brighton, Massachusetts

David G. Nathan, M.D., Physician-in-Chief, The Children's Hospital, Boston

James Perrin, M.D., Director, Ambulatory Care Programs & General Pediatrics, Children's Services, Massachusetts General Hospital, Boston

Julius B. Richmond, M.D., Director, Division of Health Policy, Harvard Medical School, Boston

Michael J. Savage, Ed.D., South Shore Educational Collaborative, Hingham, Massachusetts

Edith Siegel, L.I.C.S.W., Developmental Disabilities Unit, Massachusetts Mental Health Department

Lisa Zeig, Ed.M., Interagency Coordinator Division of Special Education, Massachusetts Department of Education, Quincy

A number of consultants have also given both advice and assistance to project members:

Anne Black, R.N., M.S.N., Former Vice President, Department of Nursing, The Children's Hospital, Boston

Karl Kuban, M.D., Department of Neurology, The Children's Hospital, Boston

Trevor McGill, M.D., Department of Otolaryngology, The Children's Hospital, Boston

Dorothy McDonald, R.N., B.S.N., Nurse Manager, Surgical and Orthopaedic Program, The Children's Hospital, Boston

Pearl O'Rourke, M.D., Intensive Care Unit, The Children's Hospital, Boston

Jo-Ellen Quinlan, R.N., B.S.N., Staff Nurse II, Department of Gastroenterology and Nutrition, The Children's Hospital, Boston

Denise Richardson, R.N., B.S.N., Staff Nurse III, Nutrition Support Team, The Children's Hospital, Boston

Harland Winter, M.D., Department of GI/Nutrition, The Children's Hospital, Boston

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Project School Care Consensus Conference, June 1988

Carol Almeida, B.S., R.N., Chief Supervising Nurse, Boston Public Schools Office of Guidance and Medical Services

Betsy Anderson, Chairperson, CAPP, Federation for Children with Special Needs, Boston

Anne Barrett-Dodwell, R.N., M.S.N., Director, Ambulatory and Community Nursing, The Children's Hospital, Boston

Henry A. Beyer, J.D., Pike Institute for the Handicapped, Boston University School of Law

Robert Billenker, M.D., Head of Comprehensive Care Developmental Pediatrics Program, Cleveland, Ohio

Richard Bourne, J.D., Senior Associate Counsel, Office of General Counsel, The Children's Hospital, Boston

Elaine Brainerd, R.N., M.S.N., Consultant, School Health Services, Connecticut De rtment of Education, Hartford

John Butler, Ed.D., Research Associate, The Children's Hospital, Boston

Terry Caldwell, M.Ed., Educational Consultant, Chronic Illness Program, The Children's Hospital, New Orleans, Louisiana

Molly Cole, B.A., Co-Director, Pediatric Research and Training Center, Farmington, Connecticut

Mary Donar, R.N., B.S.N., Administrator, Critical Care Service, Alfred I. DuPont Institute, Wilmington, Delaware

Mary Jo Dunleavy, R.N., B.S.N., Staff Nurse II, Myelodysplasia and Orthopaedic Program, The Children's Hospital, Boston

Lori DiPrete, M.S., M.T.S., Research Assistant, Project School Care, Boston

Stanley Eichner, J.D., Staff Attorney, Disability Law Foundation, Boston

Vince Hutchins, M.D., M.P.H., Director, The Office of Maternal and Child Health and Resources Development, Rockville, Maryland

Judith B. Igoe, R.N., M.S.N., Associate Professor/Director, School Health Program, Health Sciences Center, University of Colorado School of Nursing, Denver, Colorado

Lawrence C. Kaplan, M.D., Director, Birth Defects Center, The Children's Hospital, Boston

Alan Leichtner, M.D., Clinical Chief, Department of Gastroenterology and Nutrition, The Children's Hospital, Boston

Barbara Marino, R.N., Ph.D., Clinical Nurse Specialist in Infant/Family Development, The Children's Hospital, Boston

Joy McNeil, R.N., B.S.N., Co-Director, Pediatric Research & Training Center, Farmington, Connecticut

LaRae Munk, J.D., Research Assistant, Michigan Study of School Transportation Safety for the Handicapped, Okemos, Michigan

James Perrin, M.D., Director, Ambulatory Care Programs & General Pediatrics, Children's Services, Massachusetts General Hospital, Boston

Alan Retik, M.D., Chief, Department of Urology, The Children's Hospital, Boston

Margaret Smith, R.N., M.S.N., Health Care Coordinator, Kennedy Day School, Brighton

Lyle Stephens, Chairman, National Committee on School Transportation for the Handicapped, Okemos, Michigan

Sally E. Tarbell, Ph.D., Assistant Professor, Coordinator of Feeding Clinic, University of Massachusetts Medical School, Worcester

Ann Todaro, R.N., M.S.N., Coordinator, Chronic Illness Program, The Children's Hospital, New Orleans, Louisiana

David Todres, M.D., Director, Neonatal & Pediatric Intensive Care Unit, Massachusetts General Hospital, Boston

Michael Weitzman, M.D., Medical Director, Parent and Child Health Services, The City of Boston, Boston City Hospital

Deborah Klein Walker, Ed.D., Assistant Commissioner, Bureau of Parent, Child and Adolescent Health, Massachusetts Department of Public Health

Marilyn West, B.S., M.A., N.P., Nursing Services Coordinator, Santa Clara Office of Education, San Jose, California

Barbara Weston, R.N., M.S.N., Clinical Nurse Specialist in Developmental Disabilities, Shriver Center, Waltham, Massachusetts

Lisa Zeig, Ed.M., Interagency Coordinator, Division of Special Education, Massachusetts Department of Education, Quincy

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Disclaimer

These **Guidelines** are the result of a careful search of the medical, nursing, educational and legal literature, two years of committee work, and a consensus conference of medical, nursing, educational and legal experts from around the United States. The recommendations contained in these **Guidelines** reflect the best and most current medical, nursing, and educational advice that Project School Care could obtain.

While it is expected that these **Guidelines** will play a part in establishing standards for the proper care of children assisted by medical technology in the school setting, there is no guarantee that these recommendations will be accepted by schools, courts or others. Each school system must make its own determinations as to which recommmendations to follow and which to reject.

The **Guidelines** are written to assist school systems in establishing a safe environment for children dependent on medical technology, conducive to receiving the public education to which they are entitled. These **Guidelines**, however, are just that. They do not stand alone, but must be individually customized into a carefully developed health plan which takes into account the unique needs and circumstances of each child, establishes a comprehensive training program, and involves the child's primary health care provider, specialists who are knowledgeable about the child, the child's parents, the school nurse, community health providers and other medical and educational professionals. Together this group can help establish a plan of care that best meets the child's schooling needs and potentialities.

Introduction

Two exciting modern advances create the need for this book: one technical and the other social. As the knowledge base regarding chronic illness and physically disabling conditions has increased, so has the technical ability to substitute external support for internal functions, thereby greatly enhancing the life chances of sick and disabled children. Perhaps as great an advance has occurred in the societal commitment to ensure the quality of children's lives as well as their longevity. While these innovations are truly positive, they bring with them substantial challenges, particularly for families and communities.

Technical improvements are found throughout the fields of pediatrics and pediatric surgery. Some of the improvements are relatively mundane, such as the substitution of more flexible tubing for less compliant rubber. Others are astounding feats of reconstructive work, which have transformed hopeless situations into triumphs. Others have been the slow development of synergistic multidisciplinary services in neonatal, medical and surgical ICUs, which have allowed children to get over particularly difficult rough spots in the course of their illness. And still other improvements have been due to the commitment of resources to develop new techniques for feeding, support of respiration, and creative systems for the support of other body functions in children with functional disabilities.

All of these improvements are visible in any pediatric unit or children's hospital. A stroll through the corridors acquaints the modern visitor with children being fed regularly through stomach tubes and intravenous lines and pumps, with mothers carrying portable tanks on their backs to supply oxygen to their babies through neatly placed nasal tubes, which are worn comfortably and naturally by the children. Less apparent may be the fact that many of these children are receiving complex medical treatments, such as infusions of specialized materials and medications or dialysis. All of these highly technical procedures are now routine and available to most children.

The increased access to modern medical technology is now becoming visible in other ways as well. Epidemiologists are beginning to document an increasing number of children dependent on medical technology within society. No longer are the very low birth weight survivors of extremely premature births reported on a case by case basis. Such survival is now expected to occur in thirty to forty percent of very low birth weight children. Moreover the survival from many medical conditions is increasing daily. Several such conditions are acute lymphocytic leukemia, cystic fibrosis and sickle cell anemia. Better care of the nutritional and physical needs of severely disabled youngsters has also contributed significantly to their survival and increased presence in the childhood population.

But besides a presence in hospital corridors and statistical reports, there is a dramatic increase in the involvement of these children and their families in the community and a response on the part of the community to try to meet their needs. Largely stimulated by parents and community organizations devoted to the affairs of handicapped citizens, major societal changes have occurred which offer increasing hope for life fulfillment to children with chronic illnesses and disabling conditions. Section 504 of the Rehabilitation Act, P.L. 94-142 (the Education for All Handicapped Children Act) and the recent Supreme Court decision, *Tatro* v. *the Irving Independent School District*, combine to create a bulwark of rights for handicapped children: access to public buildings, access to education and access to needed nursing services within the school setting.

Three years ago a task force was formed in Massachusetts to explore the community (and particularly the school) response to these technical and societal developments. The task force identified a number of areas of concern and published a report urging the creation of better systems to meet the new needs posed by children dependent on medical technology. The group recognized that on a national level there remains controversy regarding the full extent of nursing services to be provided in schools. They also acknowledged the financial and legal challenges inherent in the provision of community service. Finally they pointed to the immediate and serious need for experts in medicine, nursing, education and law to take a long hard look at the community response to the mandates.

Project School Care is a project of The Children's Hospital in Boston designed to address the medical/nursing recommendations of the task force. The project was funded by the National Institute on Disability and Rehabilitation Research and the Division of Maternal and Child Health Care to create a set of guidelines for schools and community agencies to use to help promote the safe and well adapted functioning of children with chronic illness, physically disabling conditions and medical dependency. The guidelines are just that. They are not prescriptions; they are not protocols. They provide a basic structure for operations and suggested procedures, which are intended to help schools and families as they develop individually customized programs for children addressing the unique needs of the child and taking advantage of the particular resources available to the community.

These guidelines are presented in a loose-leaf binder with the hope that the materials will be used as resources, photocopied and distributed as needed to appropriate personnel. We also expect that in an evolving field, frequent revision will be called for and that we and those using the guidelines will be adding and subtracting materials.

These guidelines are offered with the sincere hope that they will provide useful information and a springboard for the creative and dedicated efforts of those families, schools and community agencies who work so hard day in and day out to turn the advances of technology and societal commitment into the reality of meaningful lives for the children.

Judith S. Palfrey, M.D.
Director
Project School Care

July 7, 1989

How To Use This Book

This book is intended for use by professionals who work with children assisted by medical technology in educational settings. While parts of the book are written for people with no medical background, other sections detail the specific technical procedures that are needed on a daily basis. Many of the materials in the book are intended for distribution and for daily monitoring. There are handouts, emergency procedure sheets, logs and an informational introductory letter about each assistive device or procedure.

Section I contains important administrative guidelines, which outline a procedure for entrance into an educational setting and a review of universal precautions. These chapters should be read by all administrative personnel responsible for the safe placement of the child within the educational setting, including special education directors, administrators and teachers as well as school health personnel.

The procedure for entrance into an educational setting outlines the steps and roles of the personnel needed to facilitate the admission of a child with special health care needs to school. Training of school staff and direct care-givers is also reviewed.

The chapter on universal precautions reviews current recommendations for care-givers and school staff regarding safe handling of blood and body fluids, and disposal of waste materials. In addition, basic hygiene to prevent spread of infection is reviewed. All school personnel should be aware of the recommendations and procedures in this section.

Section II includes useful documents: a sample Health Care Plan, an Emergency Plan, a sample log sheet and sample permission forms. These documents are intended to be copied or adapted for use by the health care coordinator to develop a child-specific plan of care in the school.

The first page of the Health Care Plan is a checklist of the important information, processes and documents that should be completed before the prospective student enters school. In addition to a medical history and the child's special health care needs, the Health Care Plan contains child-specific procedural guidelines. These guidelines include a list of equipment needed, a description of the specific procedure and any modifications the student requires, such as diet, transportation and staffing. Potential problems and emergencies that may occur are also reviewed for the specific student and an emergency plan format is provided. The emergency plan may be adapted to the existing school policy and posted in the appropriate areas of the school, such as the main office, health room and classroom.

The Health Care Plan should be signed by the parent/guardian, the physician, the school administrator and the school nurse. It is intended to be an integral part of the student's school record. The plan should be reviewed by all pertinent school personnel, and should be included in the Individual Education Plan, if the student has one.

The sample log sheets are designed to be used to record and document the daily care that the student receives. The permission forms included may be used to document parental authorization for care as well as a doctor's order for specialized health care.

Section III contains procedural guidelines for tube feeding, intravenous lines, catheterization, ostomy care and respiratory care. The procedures outlined in the guidelines may be adapted for the child-specific part of the Health Care Plan. In addition, this information can be used for teaching and training school staff and care-givers.

Each chapter contains the following sections:

- Structure and Function—a brief overview of the organ system involved.
- Purpose—a description of the device/procedure and indications for use.
- Suggested Settings—a review of appropriate locations for care.
- Suggested Personnel and Training—recommendations for care-givers and training.
- The Health Care Plan: Issues for Special Consideration—pertinent concerns to be included when developing the Health Care Plan for an individual student.
- Procedures—includes the step-by-step procedure, points to remember and appropriate equipment.
- Possible Problems—discusses potential problems and emergencies, the probable cause, and appropriate actions.
- General Information Sheet—an introductory letter to give school personnel a broad overview of the child's special health needs and staff members trained to deal with any problems.

Section IV of the manual contains skills checklists developed by the Ventilator Assisted Care Program and Chronic Illness Program of the Children's Hospital, New Orleans and adapted for use in this book with their permission. These lists are intended for training direct care-givers. The checklists provide a step-by-step review of each procedure. After the trainee successfully completes each step, the instructor comments on the care-giver's strengths and weaknesses and makes recommendations for further training and review. This allows the checklists to serve as documentation of training.

Section V includes a comprehensive bibliography. In addition to references for the specific procedure and devices, it also includes a list of comprehensive manuals and resources, and general references on children dependent on medical technology.

Procedure for Entrance into an Educational Setting for the Child Assisted by Medical Technology

The entry of a child assisted by medical technology into the school setting presents a challenge to the family, student and school staff. A medically safe and educationally sound program, accomplished by a collaborative effort, should create an environment that fosters academic success and social competence.

For a smooth transition into the education setting, an organized planning process must be followed. This section outlines the steps and roles of personnel needed to facilitate this process.

Early Notification

It is essential that the educational setting be notified about a prospective student with special health care needs at least two to three months before school entrance. While notification usually comes from the parent, in the case of the child assisted by medical technology, the child's health care provider should also notify the education system as soon as the child is ready to leave the hospital or chronic care facility.

Once the child is out of the hospital, other sources of referral to the education system may include case managers, the primary pediatrician, visiting nurses and other home care providers. Staff from any public or private developmental or education program in which the child may be currently enrolled should also initiate a timely referral to the new program.

Depending on the education system, different personnel may receive the notification, including the district superintendent, the principal and the special education director, among others. School health professionals, such as the school nurse and school physician, must also be notified, as their input is essential in planning for placement.

Administrative Responsibility

The education coordinator (e.g., special education director or principal) oversees the admission process to ensure that the needs of the child in the school setting are provided for. The determination of these requirements must be based on reviewing the appropriate health and education assessments. Confidentiality and privacy should be respected and preserved.

It is also the responsibility of the education coordinator to provide adequate staffing to meet the student's education, transportation and health care needs. The appropriate staff should attend the planning and training meetings. Also, the Health Care Plan and Emergency Plan should be reviewed and signed by the education coordinator.

The education coordinator is also responsible for arranging adequate insurance, as required by state law, to cover the liability issues involved when children assisted by medical technology attend an educational setting.

The Role of the Parent or Guardian

Due to the parent or guardians' unique understanding of their child's needs and abilities, they will have an integral role in the planning process. They are the ultimate source of information and resources. Their role will include:

- Advocacy on behalf of the child.
- Providing access to health care providers.
- Participation in planning and training meetings.
- Approval of the Education and Health Care Plans and Emergency Plan.
- Notifying the school health coordinator of changes in the student's condition or health care requirements.
- Serving as a source of child-specific information and, when appropriate, training.

Role of the School Health Care Coordinator

This person will serve as a liaison among family, community health providers and educators to assure that the special health care needs of the student are addressed in the school. In most cases the school nurse is the appropriate person for this role. The health care coordinator is responsible for:

- Generating a nursing assessment of the child, based on a home, hospital or school visit.
- Obtaining pertinent medical and psychosocial information.
- Developing a Health Care Plan for the student in collaboration with the family, student and physician.
- Ensuring that a child-specific emergency plan is in place. This should be developed in collaboration with school administration, community emergency personnel and family.
- Attending the education planning meeting, reviewing the Health Care Plan, and making recommendations for placement, staffing and training, when pertinent, based on the student's health care needs.
- Coordinating the student's in-school health care as specified in the Health Care Plan.
- Ensuring that care-givers in the school have received competency-based training in appropriate child-specific techniques and problem management.
- Providing information for other personnel and students in the education setting about the special medical needs of the student, when appropriate.
- Maintaining appropriate documentation.
- Regularly reviewing and updating the Health Care Plan and training of care-givers, based on the student's condition.

Pre-Planning Meeting

After the school has been notified about a prospective student with specialized medical needs, the school will arrange a meeting with an administrative designee (principal or special education director), the parents/guardian and the student (if appropriate), and the school nurse. At this meeting, a health care coordinator in the educational setting will be selected.

Planning Meeting

At this meeting, the parents and student, school health coordinator, members of the education evaluation team, and education and administrative staff will meet to review and discuss safe and appropriate classroom placement, and necessary services and personnel for the child to attend school in the least restrictive environment. This meeting should be held for students assisted by medical technology, regardless of their need for special education. If the student is to receive special educational services, the Health Care Plan should be incorporated into the Individual Education Plan.

Training

Training of staff and care-givers is key to assuring the ability of the education setting to accommodate the student as safely as possible. Training should occur on several different levels from general information to school staff to child-specific techniques for direct care-givers. This process does not end with the child's entrance into school. Regular review and update of skills should occur.

Information Meeting

Once appropriate placement and services have been designated for the prospective student, the school health coordinator should organize a meeting (or series of meetings) to educate the school staff about the student's condition and specialized medical needs. The meeting(s) should address any concerns and questions of the school personnel, such as liability, roles and responsibilities of staff members. In addition, a general overview of the student's Health Care Plan will be presented. All school staff who will interact with the student should attend. The parent and student may or may not participate in these meetings.

General Staff Training

It is the responsibility of the school health coordinator to provide a general overview of the student's condition and health care needs. This should be done in conjunction with the family and other consultants such as the physician, home care provider or specialists from the child's medical center. Personnel who should attend this general staff training session include teachers, the principal and/or special education director, community emergency personnel and other staff who will be in contact with the student, such as the bus driver, occupational therapist and physical therapist.

Topics that should be covered in the general staff training include:

- An overview of the child's condition and specialized health care needs.
- A detailed review of the student's Health Care Plan.
- A basic overview of pertinent anatomy and physiology.
- The different staff member roles and responsibilities in the daily and emergency care of the student in school.
- Transportation issues and personnel.
- Emergency Plan and procedures.

Staff education can be accomplished through formal didactic sessions, "hands-on" introduction to equipment, use of audio-visual aids, as well as other pertinent teaching tools. Staff members should be encouraged to express their questions regarding the student's needs and care in the training sessions. Staff training should be updated with any change in the student's condition or placement in the school (at least yearly).

Child-specific Technical Training

The essential and back-up care-givers who will be responsible for providing direct care for the student during the school day must receive training in child-specific procedures. Based on the child's medical and care needs, the care-givers may require more formalized medical training. Recommendations for essential and back-up personnel are included in each of the procedural guidelines.

Training in child-specific skills may be obtained from the local medical center, the home care provider or other health care professional with clinical expertise in pediatric care. A technical skills checklist is included at the end of this manual for each procedure. Each list can be used as a foundation for competency-based training in appropriate techniques and problem management. Specific procedures are outlined step-by-step. The professional providing the training is responsible for documenting acquisition of skills by completing the checklist as each technique is mastered.

In addition, the trainer should include comments regarding the care-giver's strengths and weaknesses, as well as recommendations for further training and periodic skill review. Family involvement is essential in this training and the parent or guardian should also sign the skills checklist.

Review of training should occur whenever there has been a change in the student's status or when an emergency has occurred. Training and review processes should be documented by the school health coordinator.

Follow-up and Training

Once the initial phase of training and planning is completed, it is essential that the Health Care Plan and caregivers' skills be evaluated regularly.

The Individualized Education Plan and the Health Care Plan should be reviewed yearly. Based on the child's condition, the reassessment of the Health Care Plan may need to be done more frequently.

After one month, it is important to assess the child's adaptation to school and the school's accommodation to the child.

Home/Hospital Arrangements

Occasionally it may not be in the student's best interest to be in a group setting such as school. While this is rare, some children assisted by medical technology may have serious or unstable medical conditions. In such a case, decisions regarding school attendance should be made by a team consisting of the child's parents/guardian, primary care physician, pertinent medical specialists, the school health coordinator and the educational coordinator.

If it is recommended that the child not attend school, every effort should be made to continue the child's educational services in an alternate setting (home or hospital) at the level the child can tolerate. Contact with other children should be encouraged through visitation, telephone calls, etc. The child's status must be regularly reassessed and school attendance reconsidered if the child's medical condition permits.

Universal Precautions and Infection Control

In response to the increase in hepatitis B and human immunodeficiency virus (HIV) infections, the Centers for Disease Control have recommended "universal blood and body-fluid precautions." These measures are intended to prevent transmission of these and other infections, as well as to decrease the risk of exposure for care-providers and students. As it is currently not possible to identify all infected individuals, these precautions must be used with every student, regardless of their medical diagnosis.

Universal precautions pertain to blood and body fluids containing blood, cerebrospinal fluid, synovial fluid, vaginal secretions, semen, and pericardial fluid. These precautions do not apply to other body products such as saliva, sputum, feces, tears, nasal secretions, vomitus and urine unless blood is visible in the material. However, these other fluids and body wastes can be sources of other infections and should be handled as if they are infectious.

The single most important step in preventing exposure to and transmission of any infection is anticipating potential contact with infectious materials in routine as well as emergency situations. Based on the type of possible contact, the care-giver should be prepared to use the appropriate precautions and techniques prior to providing care. Diligent and proper hand washing, the use of barriers, appropriate disposal of waste products and needles, and proper decontamination of spills are essential techniques of infection control. Using common sense in the application of these measures will enhance protection of both the care-giver and the student.

Hand Washing

Proper hand washing is crucial to preventing the spread of infection. Textured jewelry on the hands or wrists (such as rings with stones) should be removed prior to washing and kept off until completion of the care procedure and hands are rewashed. Use of running water, lathering with soap and using friction to clean all surfaces of remaining jewelry and hands is key. Rinse well with running water and dry hands with paper towels. If soap and water are unavailable, wet towelettes or "Handi-wipes" may be used.

- Hands should be washed before physical contact with student and after the contact is completed.
- Hands should be washed after contact with any used equipment.
- If hands (or other skin) become soiled with blood or body fluids, they should be washed immediately before touching anything else.
- Hands should be washed whether gloves are worn or not and after gloves are removed.

Barriers

Barriers include disposable gloves, protective eye wear, masks and gowns. The use of a barrier is intended to reduce the risk of contact with blood and body fluids for the care-giver as well as to control the spread of infectious agents from student to student. It is essential that appropriate barriers be used when contact with potentially infectious material is possible.

Gloves should be worn when direct care of the student may involve contact with blood or body fluids. For infection control, it is recommended that gloves be worn as well for contact with urine, feces and respiratory secretions. Gloves should be disposed of after each use and not reused.

- Gloves should be worn when changing a diaper or catheterizing a student.
- Gloves should be worn when changing dressings or sanitary napkins.
- Gloves should be worn when providing mouth, nose or tracheal care.
- Gloves should be worn if the care-giver has broken skin on the hands (even around the nails).
- Gloves should be worn when cleaning up spills of blood (e.g., nosebleeds) or body fluids and wastes, and soiled supplies.

Gowns or aprons may be worn to protect the care-giver's clothing if spattering of body fluids is possible. The apron or gown should be laundered or disposed of after each care session and should not be reused. In addition, protective eye wear and masks should be worn if splashing of body fluids is likely to occur (such as mouth suctioning or a coughing student).

Chux or other waterproof barriers should be used to cover any work surfaces if drainage or splashing with blood or body fluids is possible. The barrier should be disposed of after each care session and should not be reused.

In the event CPR is needed, a disposable mask with a one-way valve may be used. If this is unavailable, gauze or some other porous material can be placed over the mouth and mouth-to-mouth resuscitation given.

Disposal of Waste

All used or contaminated supplies (including gloves and other barriers)—except for syringes, needles and other sharp implements—should be placed in a plastic bag which is then sealed. This bag should be placed in a second plastic bag which is also sealed. The double-bagged waste can then be thrown in the garbage, out of the reach of children or animals.

Needles, syringes and other sharp objects should be placed in a metal or other puncture-proof container immediately after use. To reduce the risk of an accidental needle stick or cut, needles should not be recapped, bent or removed from the syringe before disposal. Once it is full, the container should be sealed, double bagged and then disposed of in the garbage away from the reach of children.

Bodily wastes such as urine, vomitus or feces should be disposed of in the toilet.

Clean-up

Spills of blood and body fluids that are covered under universal precautions should be cleaned up immediately. The CDC method is as follows:

- Wear gloves.
- Mop up the spill with paper towels or other absorbent material.
- Using a solution of one part household bleach (sodium hypochlorite) in ten parts of water, wash the area well.
- Dispose of gloves, soiled towels and other waste in a sealed double plastic bag in the garbage as outlined above.

Routine environmental clean-up of facilities (such as the health room and bathrooms) does not require any modification unless contamination with blood or body fluids covered under universal precautions should occur. If so, the area should be decontaminated using the procedure outlined above. Regular cleaning of non-contaminated surfaces such as toilet seats and table tops can be done with the standard cleaning solution already used or the bleach solution outlined above. Regular cleaning and removal of obvious soil is more effective than extraordinary attempts to disinfect or sterilize surfaces.

Laundry

Whenever possible, disposable barriers should be used, if contamination with body fluids or blood is possible. If sheets, towels or clothing do become soiled, they should be handled as little as possible. Wash with hot water and detergent for at least 25 minutes. Cool water washing is also acceptable if an appropriate detergent is used for the water temperature.

Accidental Exposure

Accidental exposure to blood, body products or body fluids places the exposed individual at risk of infection. This risk varies depending on the type of body fluid (blood vs. respiratory vs. feces), the type of infection (salmonella vs. HIV) and the integrity of the skin that is contaminated.

- Always wash the contaminated area immediately with soap and water.
- If a mucous membrane splash (eye or mouth) or contamination of broken skin occurs, irrigate or wash the area thoroughly.
- If a cut or needle stick injury occurs, wash the area thoroughly with soap and water.

In those instances where broken skin, mucous membrane or needle stick exposures occur, the care-giver should document the incident. The student's parent or guardian should also be notified. The person who had the exposure should contact his or her physician for further care as outlined by the CDC recommendations.

Pregnant Women

Pregnant women are at no higher risk of infection than other care-providers, as long as appropriate precautions are observed. However, due to the possibility of in utero transmission of viral infections such as cytomegalovirus (CMV) or HIV, as well as the potential for adverse outcomes with these congenitally acquired infections, pregnant women should be especially careful to observe universal precautions.

Further information regarding universal precautions and infection control is available from the local Public Health Department and in references at the end of this section.

_____
(Health Care Coordinator)

_____
(Education Coordinator)

Health Care Plan Checklist

Student Information:

_____ (Name)

_____ (Birthdate)

_____ (Parent/Guardian)

_____ (Address)

Mother (___) _____ (Home)

(___) _____ (Work)

Father (___) _____ (Home)

(___) _____ (Work)

_____ (School)

_____ (Grade)

Preparation for Entry:

☐ Home Visit _____ (Date)

☐ Medical History _____ (Date)

☐ Planning Meetings _____ (Date) _____ (Date) _____ (Date)

☐ Staff Training Meetings _____ (Date) _____ (Date) _____ (Date)

☐ Educational Team Meeting _____ (Date)

Health Care Plan:

Doctor's Order _____ (Date)

Child-Specific Procedural Guidelines _____ (Date)

Emergency Plan _____ (Date)

Health Care Plan Included in Child's Record: _____ (Date)

Child-Specific Care-giver Training (Skills Checklist) _____ (Date)

Next Training Review _____ (Date)

Health Care Plan Included in IEP: _____ (Date)

Name _____ **Date** _____

Important Personnel

Primary Health Care Providers	Telephone Number
_____	_____
_____	_____
_____	_____
_____	_____

School Contacts

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

	Training	
Direct Care-Givers	Child-Specific	General
_____	_____	_____
_____	_____	_____
Substitute Care-Givers		
_____	_____	_____
_____	_____	_____
Back-up Staff		
_____	_____	_____
_____	_____	_____

Child-Specific Training Done By

_____ _____
(Date)

General Staff Training Done By

_____ _____
(Date)

Name _____ **Date** _____

Background Information

Brief Medical History: _____

Special Health Care Needs of the Child: _____

Baseline Status: _____

Medication: _____

Diet: _____

Transportation Needs: _____

Name _____ **Date** _____

Procedure: _____

Frequency: _____ Times: _____

Position of student during procedure: _____

Ability of the student to assist/perform procedure: _____

_____

Suggested setting for procedure: _____

Equipment:

Daily: _____ Emergency: _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

Checked by: _____ Checked by: _____

Storage: _____ Storage: _____

Maintenance: _____ Maintenance: _____

Home Care Co: _____ Phone: _____

Child-specific techniques and helpful hints: _____

_____

_____

_____

_____

_____

_____

Special considerations and precautions: _____

_____

_____

_____

_____

_____

_____

Name _____ **Date** _____

Possible Problems

Observation	Reason	Action

Health Care Plan:

Written and Submitted By: _____
(Name) (Date)

Reviewed and Signed By:

Parent/Guardian & Student _____
(Name) (Date)

_____
(Name) (Date)

Administrator: _____
(Name) (Date)

Physician: _____
(Name) (Date)

Next Review and Revision of Health Care Plan:

Date: _____

Health Care Plan should be revised according to child's specific needs.

Emergency Information

Name: _____ Birthdate _____

Address: _____ Telephone _____

_____

Mother: _____ Work: _____ Home: _____

Father: _____ Work: _____ Home: _____

Other contact: _____ Phone: _____

Emergency Numbers:

EMT: _____ Telephone _____

Fire: _____ Telephone _____

Police _____ Telephone _____

Home Care Co.: _____ Telephone _____

Ambulance. _____ Telephone _____

Gas Co.: _____ Telephone _____

Electric: _____ Telephone _____

Preferred Hospital:

_____ Telephone _____

Local Hospital Emergency Room:

_____ Telephone _____

Primary
Physician: _____ Telephone _____

Dentist: _____ Telephone _____

Specialists:

_____ Telephone _____

_____ Telephone _____

_____ Telephone _____

_____ Telephone _____

_____ Telephone _____

Emergency Plan

Name: _____

Date: _____

Child-Specific Emergencies:

If You See This	Do This

If an emergency occurs:

1. Stay with child.
2. Call or designate someone to call the nurse.
   State who you are:
   State where you are:
   State problem:
3. The school nurse will assess the child and decide whether the emergency plan should be implemented.
4. If the school nurse is unavailable, the following staff members are trained to deal with an emergency, and to initiate the emergency plan:

_____

_____

_____

_____

Name: _____

Emergency Telephone Procedure:

1. Dial 911 and/or designated ambulance company.

2. State who you are—"I am _____ a nurse/teacher/ para-professional in the _____ school."

3. State where you are:

   School name: _____

   Address: _____

   City: _____

4. State what is wrong with child.

5. Give specific directions: (e.g., which school entrance should be used, location of child).

6. Don't hang up. Ask for the information to be repeated and provide any other necessary information. Hang up when all information has been received and is correct.

7. **Notify:**

   a. School principal or school official in charge of the building at that time #_____

   b. School back-up personnel _____

   State:

   Emergency plan for _____ is in effect.

   The student is located _____

8. **The school official will:**

   a. Meet the EMTs.

   b. Direct EMTs to the emergency area.

   c. Call parents and other necessary individuals (including physician).

   An adult should be designated to accompany the child in the ambulance.

   Hospital that the child should be transported to _____.

Daily Log

Name _____ **School** _____

Procedures _____

Parent _____ **Phone** _____

Date/Time	Procedure Notes	Observations	Name

Physician's Order for Specialized Health Care Procedure

Student's Name: _____ Birthdate: _____

Address: _____

Procedure: _____

_____

☐ I have reviewed the Health Care Plan and approve of it as written.

☐ I have reviewed the Health Care Plan and approve of it with the attached amendments.

☐ I do not approve of the Health Care Plan. A substitute plan is attached.

Other recommendations: _____

_____

_____

_____

_____

Duration of the Procedure: _____
(Date)

Physician's Signature: _____ Date: _____

Address: _____

_____ Phone: _____

Adapted with permission from: Pupil Personnel Services, Recommended Practices and Procedures Manual, Illinois State Board of Education, 1983

Parent Authorization for Specialized Health Care

We (I), the undersigned, who are the parents/guardians of

_____ _____
(Name) (Birthdate)

request that the following health care service(s) _____

_____

be administered to our child. We understand that a qualified designated person(s) will be performing the above-mentioned health care service. It is our understanding that in performing this service, the designated person(s) will be using a standardized procedure which has been approved by our physician.

_____
(Name) (Address) (Phone)

We will notify the school immediately if the health status of _____ changes, we change physicians, or there is a change or cancellation of the procedure.

We understand that the above procedure should be scheduled before or after school hours whenever possible.

Signature of parents/guardians _____

_____

Address: _____

Phone: (Home) _____ (Work) _____

_____ _____

Date: _____

Adapted with permission from: Pupil Personnel Services, Recommended Practices and Procedures Manual, Illinois State Department of Education, 1983

Gastrointestinal System

Structure and Function

The gastrointestinal system breaks down food into basic nutrients that can feed the cells of the body. Functionally, the gastrointestinal tract is divided into two parts—upper and lower.

The upper gastrointestinal tract is where digestion and absorption of most of the nutrients occurs. The mouth, throat, esophagus, stomach and small intestine are components of this part of the digestive tract.

The **mouth** is where processing of food starts. Chewing is important because digestion is more effective with smaller particles. The food is swallowed and passes through the throat, then through the esophagus.

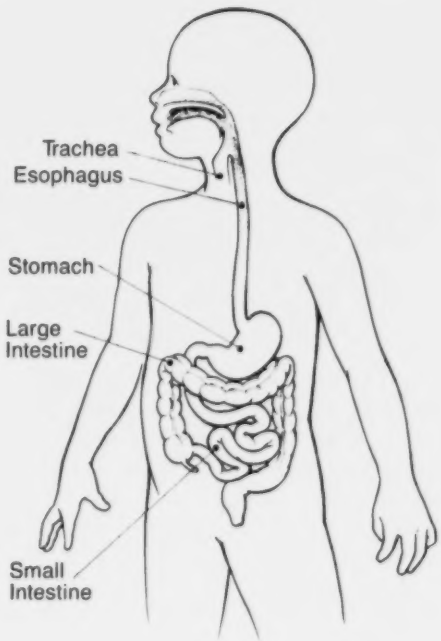
The **esophagus** is a straight tube about ten inches in length. It descends from the base of the throat behind the trachea to the stomach.

The **stomach** is a curved pouch-like organ that is located under the diaphragm in the upper left portion of the abdomen. The stomach partially digests food and regulates passage of food to the rest of the gastrointestinal tract.

The **small intestine** is approximately 12 feet long. The duodenum, jejunum and ileum are parts of the small intestine. Food passes from the stomach through the small intestine, where most digestion and absorption of nutrients takes place.

The lower gastrointestinal tract consists of the **large intestine.** This is where water is reabsorbed and undigested food is consolidated into fecal waste.

The large intestine extends from the end of the small intestine to the **rectum.** The **anus** is the opening to the outside of the body.



Function

Digestion takes place in two ways:

- Mechanical: chewing and stomach contractions break down food.
- Chemical: food is broken down by digestive acids and enzymes.

The digested food is absorbed through the lining of the intestine and then enters the bloodstream where it is carried to the cells.

Gastrostomy Tube

Purpose

A gastrostomy is a surgical opening into the stomach through the surface of the abdomen.

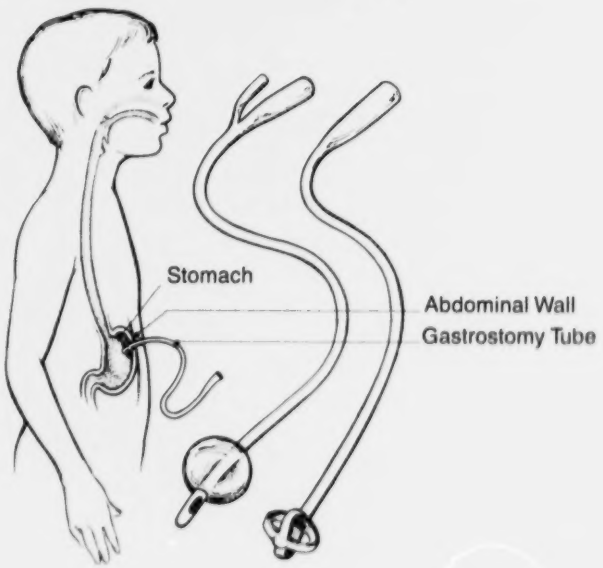
The gastrostomy tube is a flexible rubber catheter held in place by a balloon or a widened flat "mushroom" at the tip of the tube inside the stomach. The tube remains in place at all times and is clamped between feedings to prevent leakage of stomach contents. G-tubes cause no discomfort.

The gastrostomy tube may be used to administer food and fluids directly into the stomach. This method is used to bypass the usual route of feeding by mouth when:

- There is an obstruction of the esophagus (food pipe).
- Swallowing is impaired and the child is at risk for choking/aspiration.
- The child has difficulty taking enough food by mouth to maintain adequate nutrition.

A child may receive a gastrostomy tube feeding by either bolus, continuous or slow-drip method. A bolus is a specific amount of feeding given at one time (over 20–30 minutes). A slow drip is a feeding that is given slowly over a number of hours, running continuously.

The gastrostomy tube may also be used to drain abdominal contents or to release air or gas in conditions where venting is required.



Suggested Settings

There are no restrictions where the child may be fed. He or she may be fed with other children or, if the child prefers, in the health room. Some children receive feedings every 2–3 hours. These children may have their feeding administered in the classroom. They will need to remain stationary and should be able to continue sedentary school activities, e.g., reading, art, singing, computer, social studies.

Some children will not require feedings during the school hours. Their G-tubes are used to supplement oral intake of food and fluids or are used when the child is ill or when oral intake is not adequate.

For children whose gastrostomy tube requires venting or drainage, the procedures should be done in the health room or another private area. These procedures may be done after each feeding or according to physician's orders.

Gastrostomy tubes are usually covered by clothing. Children with G-tubes should be able to participate in all school activities, but participation in physical education should be determined on an individual basis.

Suggested Personnel and Training

A gastrostomy feeding may be administered by the school nurse, parent, teacher, student aide, or other staff person with proven competency-based training in appropriate techniques and problem management. The student should be encouraged to assist with the gastrostomy tube feeding as much as possible.

School personnel with regular contact with a student who has a gastrostomy tube should receive general training, covering the child's specific health care needs and potential problems, as well as how to obtain assistance should problems occur.

The basic skills checklist included at the end of this manual can be used as a foundation for competency-based training in appropriate techniques. It outlines specific procedures step-by-step. Once the procedures have been mastered, the completed checklist serves as documentation of training.

The Health Care Plan: Issues for Special Consideration

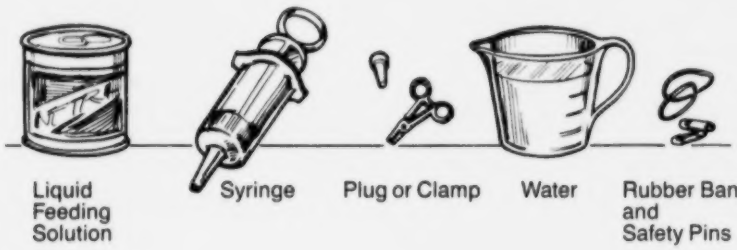
Each student's Health Care Plan must be tailored to the individual's needs. The following section covers the procedure for gastrostomy tube care and possible problems and emergencies that may arise. It is essential to review it before writing the Health Care Plan.

A sample Health Care Plan is included in the Useful Documents section of this manual. It may be copied and used to develop a plan for each student. For a child with a gastrostomy tube, the following items should receive particular attention:

- The type of feeding the child is receiving (bolus/continuous drip).
- Activity level after feeding.
- Positioning during and after feeding.
- The need for determination of gastric residuals.
- The need for venting of the gastrostomy tube.
- Patency of gastrostomy tract and time-frame for re-insertion should the gastrostomy tube fall out.
- Typical problems with feeding, such as vomiting or abdominal distention.
- Amount of oral intake.

Procedure for Gastrostomy Feeding—Bolus Method

Procedure	***Points to Remember***
1. Wash hands.	
2. Assemble equipment:	



• Liquid feeding solution/formula at room temperature	*Some children get cramps if the feeding solution is too cold.*
• 60 ml or cc catheter-tipped syringe or other container for feeding	
• Clamp or cap for end of tube (optional)	
• Water (if prescribed)	*Used to flush tubing after feeding.*
• Rubber bands and safety pins	*To secure G-tube to clothing.*
3. Explain the procedure to the child at his/her level of understanding. Encourage the student to participate as much as possible.	*By encouraging the child to assist in the procedure, the care-giver is helping the child to achieve maximum self-care skills.*
4. Position child.	*Child may be sitting or lying on right side with head elevated at a thirty degree angle. When positioning child, make sure clamp is not pressing on skin. Tubing may be pinned to shirt. Remember to unpin G-tube before proceeding with feeding.*
5. Remove cap or plug from G-tube and insert a catheter-tipped syringe into the end of feeding tube.	*G-tube is still clamped. Do not apply undue traction or pull on gastrostomy tubing.*
6. Unclamp the tubing and gently draw back on the plunger to remove any liquid or medication that may be left in the stomach (residuals).	*Some children may not need to have residuals checked. Note the amount that was withdrawn from the feeding tube and return the contents to the stomach (if ordered). Adjust the feeding volume according to doctor's orders if a residual is present. If the residual is greater than recommended, hold feeding, wait thirty to forty-five minutes and re-check.*
7. Clamp the gastrostomy tubing, disconnect the syringe and remove plunger from syringe.	
8. Reinsert catheter tip of syringe into tubing.	*Syringe should be held six inches above level of stomach, or at prescribed height.*
9. Unclamp tube, allow bubbles to escape.	

10. Pour feeding/fluid into syringe and allow to flow in by gravity.

If medications are prescribed, administer first, then proceed with feeding. If a container other than a syringe is used for the feeding, unclamp tubing and allow to flow in by gravity, following the same procedure.

******BE ALERT TO ANY UNUSUAL CHANGES IN THE CHILD'S TOLERANCE OF THE FEEDING. NAUSEA/VOMITING, CRAMPING OR DIARRHEA MAY INDICATE THAT THE FEEDING IS BEING GIVEN TOO QUICKLY OR FORMULA IS TOO COLD******

11. Continue to pour feeding into syringe as contents empty into stomach.

Depending on the age and capabilities of the child, have him/her assist with the feeding by holding syringe or pouring fluid into it. Keep syringe partially filled to prevent air from entering stomach.

12. Raise or lower syringe or container to adjust flow to prescribed rate.

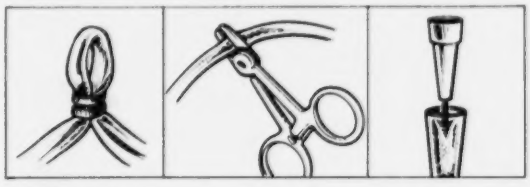
13. When feeding is completed, pour prescribed amount of water into syringe and flush tubing.

This will clear tubing of feeding and medication.

14. Vent G-tube if ordered. (Open G-tube to air.)

Venting allows drainage of fluid or release of gas bubbles in the stomach. Some children may have problems with gas otherwise.

15. Clamp tubing; remove barrel of syringe and reinsert cap into end of tubing.



Rubber Band Clamp Plug

16. Make sure tubing is secure and tucked inside clothing.

Tubing may be pinned to shirt.

17. Refer to child-specific guidelines regarding activity after feeding.

18. Apply dressing if needed, using universal precautions. (See page 17.)

19. Wash syringe and other reusable equipment in soapy water. Store in a clean area.

20. Wash hands.

21. Document feeding/medication, residual amount and feeding tolerance on log sheet.

Report to parent any change in the child's usual pattern.

Procedure for Gastrostomy Feeding—Slow Drip Method or Continuous Feeding by Pump

Procedure	*Points to Remember*
1. Wash hands.	
2. Assemble equipment:	

• Liquid feeding solution/formula at room temperature	*Some children may get cramps if feeding solution is too cold.*
• 60 ml or cc catheter-tipped syringe	
• Feeding pump (optional)	
• IV stand (optional)	
• Clamp or cap for end of tube (optional)	
• Water (if prescribed)	*Used to flush tubing after feeding.*
• Feeding bag	
• Rubber bands and safety pins	*To secure G-tube to clothing.*
3. Explain the procedure to the child at his/her level of understanding. Encourage the student to participate as much as possible.	*By encouraging the child to assist in the procedure, the care-giver is helping the child to achieve maximum self-care skills.*
4. Position child.	*Child may be sitting or lying on right side with head elevated at a thirty degree angle. When positioning child, make sure clamp is not pressing on skin. Remember to unpin tube before beginning feeding.*
5. Remove cap or plug from G-tube and insert a catheter tip syringe into the end of feeding tube.	*G-tube is still clamped. Do not apply undue traction or pull on gastrostomy tubing.*
6. Unclamp the tubing and gently draw back on the plunger to remove any liquid or medication that may be left in the stomach (residuals).	*Note the amount that was withdrawn from the feeding tube and return the contents to the stomach (if ordered). Adjust the feeding volume according to doctor's orders if a residual is present. If the residual is greater than recommended, hold feeding, wait thirty to forty-five minutes and re-check. Some children may not need to have residuals checked.*
7. Clamp the gastrostomy tubing. Disconnect the syringe.	
8. Pour feeding/fluids into feeding bag, run feeding through bag and tubing to the tip. Clamp.	*If medication is prescribed, administer before feeding.*

9. Hang bag on pole at height required to achieve prescribed flow. If a feeding pump is used, place tubing into pump mechanism and set for proper flow rate.

School activities may continue during feeding as long as the child is sedentary.

10. Insert tip of feeding bag tube into gastrostomy tube; tape securely. Unclamp G-tube.

Do not apply undue traction on gastrostomy tubing.

11. Open clamp of feeding bag tubing and adjust until drips flow at prescribed rate.

If feeding pump is used, open clamp completely. Check flow periodically and adjust if needed.

12. For **continuous feeding** with pump, add more fluid to bag when empty.

13. When **single feeding** is completed (bag empty), clamp feeding bag tubing and clamp G-tube.

******BE ALERT TO ANY UNUSUAL CHANGES IN THE CHILD'S TOLERANCE OF THE FEEDING. NAUSEA/VOMITING, CRAMPING, OR DIARRHEA MAY INDICATE THAT THE FEEDING IS BEING GIVEN TOO QUICKLY OR FORMULA IS TOO COLD.******

14. Disconnect feeding bag from G-tube.

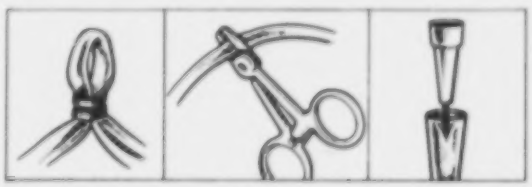
15. Unclamp G-tube and flush with water if ordered, using a syringe.

This clears the tubing of any feeding fluid.

16. Vent G-tube if indicated. (Open G-tube to air.)

Some children may have gas otherwise.

17. Clamp and cap G-tube.



18. Apply dressing if needed, using universal precautions. (See page 17.)

19. Make sure tubing is secure and tucked inside clothing. Tubing may be pinned to shirt.

Remember to unpin tube before removing shirt.

The feeding may be disconnected while the child is being transported to and from the school program.

20. Wash feeding bag, tubing, and syringe in soapy water and store in a clean area.

21. Wash hands.

22. Refer to child-specific guidelines regarding activity after feeding.

23. Document feeding and/or medication, residual volumes and feeding tolerance in log.

Report to parent any change in the child's usual pattern.

Possible Problems That Require Immediate Attention

Observations	*Reason/Action*
Color changes/breathing difficulty	*This may be due to aspiration of feeding into lungs.* *Stop feeding immediately. Call nurse if not present. Assess situation. If problem continues, institute emergency plan and notify parents.*

Possible Problems That Are Not Emergencies

Observations	*Reason/Action*
Nausea and/or cramping	*Check rate of feeding; may need to decrease rate.* *Check temperature; may be too cold—stop feeding; let feeding get to room temperature, then administer. If problem continues, notify school nurse, parent and doctor.*
Vomiting	*If you have checked all of the above, stop feeding, call school nurse, parent and doctor. Remove residual if ordered.*
Blocked gastrostomy tubing	*May be due to inadequate flushing or very thick fluid. Squeeze or roll gastrostomy tubing with fingers moving slowly down toward child's stomach. Try a catheter-tipped syringe filled with warm water, held high to facilitate movement of fluid. Try to draw back plunger of syringe. If blockage remains, contact parents.*
Bleeding/drainage	*Make sure tubing is not being pulled on. Check gastrostomy tube site for leakage.*
G-tube falls out	*In some children whose tract may close quickly, the G-tube may need to be reinserted within 1-2 hours.* *Cover the site with dry dressing or large band-aid. Notify parents.*

General Information Sheet

Children with Gastrostomy Tubes

Dear (Teacher, lunch aide, bus driver, etc.):

_____ (Student) has a condition that requires a gastrostomy tube. This is a simple and safe way of giving food, medicines and fluids directly into the stomach, because the child is unable to take these by mouth.

The gastrostomy is a surgical opening into the stomach. A flexible rubber tube (the gastrostomy tube) is put into the surgical opening. It is held in place from the inside of the stomach, as well as on the outside, at all times. The tube is clamped or capped between feedings to prevent leakage. These tubes do not normally cause the child discomfort and are covered by clothing.

The child may receive feedings or medication through the gastrostomy tube as needed during the school day in the classroom, the lunchroom or the health office. Unless he or she has a condition that otherwise would interfere with participation in physical education or other activities, there is no reason why he or she cannot participate fully. Special consideration may be needed, however, for field trips or other activities when the child may not be able to receive a regularly scheduled feeding.

If the child has any problems with his/her gastrostomy tube, contact:

_____

_____

_____

These staff members have been trained to deal with any problems that may arise with this child.

For more information about gastrostomy tubes, or the student's needs, consult the school nurse or parent.

Gastrostomy Feeding Button

Purpose

The gastrostomy is a surgical opening into the stomach through the surface of the abdomen. The gastrostomy feeding button is a "T" shaped plastic device held in place by a mushroom-shaped dome inside the stomach. The button remains in place at all times and is capped by an attached safety plug between feedings. In addition, the dome has an anti-reflux valve to further prevent leakage of stomach contents. A feeding is administered by inserting a small tube through the button into the stomach. When the feeding is completed the tube is removed and the safety plug closed.

The gastrostomy may be used to administer food and fluids directly into the stomach. This method is used to bypass the usual route of feeding by mouth when:

- There is an obstruction of the esophagus (food pipe).
- Swallowing is impaired and the child is at risk for choking/aspiration.
- The child has difficulty taking enough food by mouth to maintain adequate nutrition.

A child may receive a gastrostomy button feeding by either **bolus, continuous or slow-drip** method. A bolus is a specific amount of feeding given at one time (over 20–30 minutes). A slow drip is a feeding that is given slowly over a number of hours, running continuously.

The gastrostomy button may also be used to drain abdominal contents or to release air or gas in conditions where venting is required. This is done by inserting a special adaptor or tube to open the anti-reflux valve.

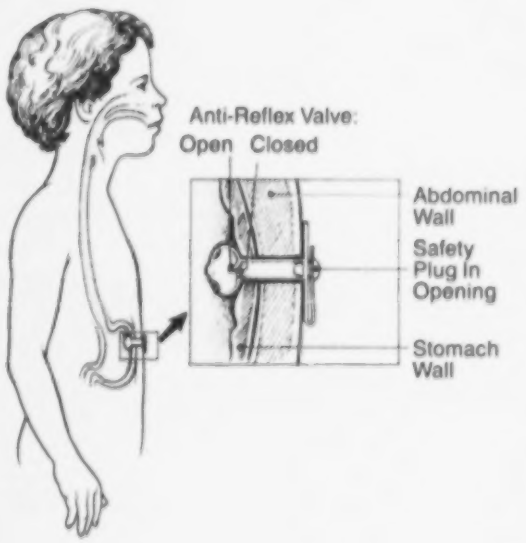
Suggested Settings

There are no restrictions where the child may be fed. He or she may be fed with other children or, if the child prefers, in the health room. Some children receive feedings every 2–3 hours. These children may have their feeding administered in the classroom. They will need to remain stationary and should be able to continue sedentary school activities, e.g., reading, art, singing, computer, social studies.

Some children will not require feedings during the school hours. Their buttons are used to supplement oral intake of food and fluids or are used when the child is ill or when oral intake is not adequate.

For children whose gastrostomy button requires venting or drainage, the procedures should be done in the health room or another private area. These procedures may be done after each feeding or according to physician's orders.

Gastrostomy buttons are usually covered by clothing. Children with these devices should be able to participate in all school activities, but participation in physical education should be determined on an individual basis.



Suggested Personnel and Training

A gastrostomy feeding may be administered by the school nurse, parent, teacher, student aide, or other staff person with proven competency-based training in appropriate techniques and problem management. Any school personnel who have regular contact with a student who has a gastrostomy feeding button must receive general training, covering the child's specific health care needs, as well as how to obtain assistance if problems should occur.

The basic skills checklist included at the end of this manual can be used as a foundation for competency-based training in appropriate techniques. It outlines specific procedures step-by-step. Once the procedures have been mastered, the completed checklist serves as documentation of training.

The Health Care Plan: Issues for Special Consideration

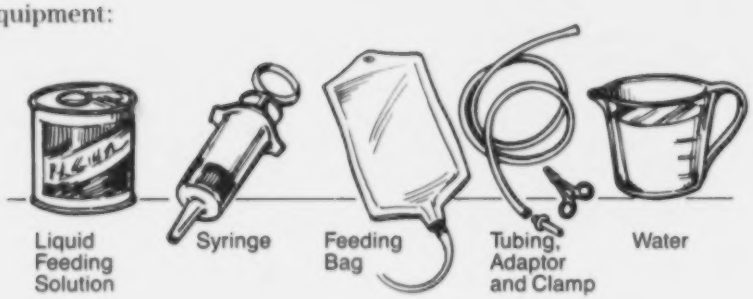
Each student's Health Care Plan must be tailored to the individual's needs. The following section covers the procedure for gastrostomy button care and possible problems and emergencies that may arise. It is essential to review it before writing the child-specific procedural guidelines and the Health Care Plan.

A sample Health Care Plan is included in the Useful Documents section of this manual. It may be copied and used to develop a plan for each student. For a child with a gastrostomy button, the following items should receive particular attention:

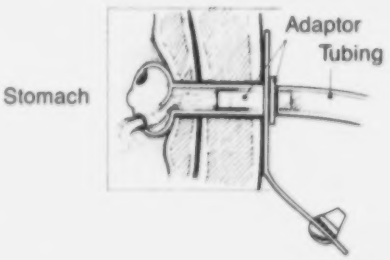
- Type of feeding child is receiving (bolus/continuous/slow-drip).
- Activity level after feeding.
- Positioning during and after feeding.
- The need to determine gastric residuals.
- The need to vent the gastrostomy button.
- Patency of the gastrostomy tract and the time-frame for re-insertion of the button should it fall out.
- Typical problems with feeding, such as vomiting or abdominal distention.
- Amount of oral intake.

Gastrostomy Button Feeding Procedure—Bolus Method

Procedure	*Points to Remember*
1. Wash hands.	
2. Assemble equipment:	



• Liquid feeding solution/formula at room temperature	*Some children get cramps if the feeding solution is too cold.*
• 60 ml or cc catheter-tipped syringe or other container for feeding (e.g., bottle, bag)	
• Adaptor with tubing and clamp	*The adaptor will vary with the size of the button.*
• Water (if prescribed)	*Used to flush tubing after feeding.*
3. Explain the procedure to the child at his/her level of understanding. Encourage the child to participate as much as possible.	*By encouraging the child to assist in the procedure, the care-giver is helping the child to achieve maximum self-care skills.*
4. Position child.	*Child may be sitting or lying on right side with head elevated at a thirty degree angle.*
5. Remove plunger from syringe and attach the adaptor to feeding syringe.	
6. Open safety plug from button and insert tubing into button.	



7. Clamp or pinch off tubing.	*If medications are prescribed, administer first, then proceed with feeding. If another type of container is used for feeding solution, unclamp tubing and allow to flow in by gravity.*
8. Pour feeding into syringe.	
9. Elevate syringe and unclamp tubing.	*Syringe should be held six inches above level of stomach, or at prescribed height.*

10. Continue to pour feeding into syringe as contents empty into stomach.

Depending on the age and capabilities of the child, have him/her assist with the feeding by holding syringe or pouring fluid into it. Keep syringe partially filled to prevent air from entering stomach.

11. Raise or lower syringe or container to adjust flow to the prescribed rate.

******BE ALERT TO ANY UNUSUAL CHANGES IN THE CHILD'S TOLERANCE OF THE FEEDING. NAUSEA/VOMITING, CRAMPING OR DIARRHEA MAY INDICATE THAT THE FEEDING IS BEING GIVEN TOO QUICKLY OR FORMULA IS TOO COLD******

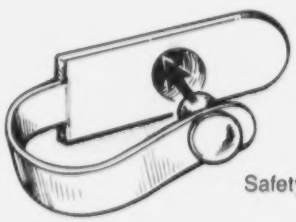
12. Flush button with water, if ordered.

This will clear button of feeding and medication.

13. When feeding is complete, remove the adaptor with feeding syringe.

Wash catheter-tipped syringe, and tubing with warm water and mild soap and store in clean area.

14. Close safety plug.



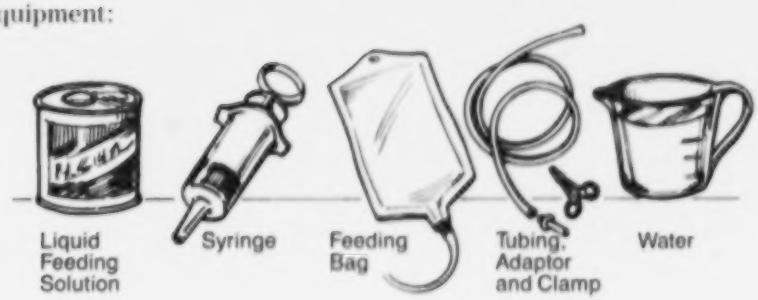
Safety Plug

15. Wash hands.

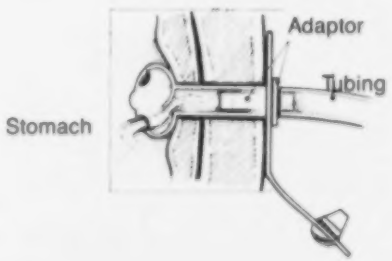
16. Refer to child-specific guidelines regarding activity after feeding.

Procedure for Gastrostomy Button Feeding—Slow Drip or Continuous Feeding By Pump

Procedure	*Points to Remember*
1. Wash hands.	
2. Assemble equipment:	

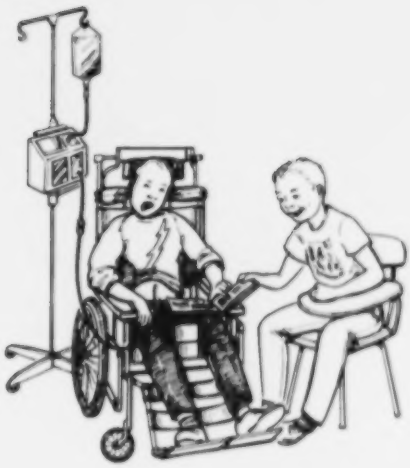


• Liquid feeding solution/formula at room temperature	*Some children may get cramps if feeding solution is too cold.*
• 60 ml or cc catheter-tipped syringe	
• Feeding pump (optional)	
• IV stand (optional)	
• Adaptor with tubing and clamp	*The adaptor will vary with the size of the button.*
• Water (if prescribed)	*Used to flush tubing after feeding.*
• Feeding bag	
3. Explain the procedure to the child at his/her level of understanding. Encourage the child to participate as much as possible.	*By encouraging the child to assist in the procedure, the care-giver is helping the child to achieve maximum self-care skills.*
4. Position child.	*Child may be sitting or lying on right side with head elevated at a thirty degree angle.*
5. Attach the adaptor to feeding bag tubing.	
6. Pour feeding/fluids into feeding bag, run feeding through bag and tubing to the tip. Clamp.	*If medication is prescribed, administer before feeding.*
7. Hang bag on pole at height required to achieve prescribed flow. If a feeding pump is used, place tubing into pump mechanism and set for proper flow rate.	*School activities may continue during feeding as long as the child is sedentary.*
8. Open safety plug and insert tubing into button.	



9. Open clamp of feeding bag tubing and adjust until drips flow at prescribed rate.

If feeding pump is used, open clamp completely. Check flow periodically and adjust if needed.



BE ALERT TO ANY UNUSUAL CHANGES IN THE CHILD'S TOLERANCE OF THE FEEDING. NAUSEA/VOMITING, CRAMPING, OR DIARRHEA MAY INDICATE THAT THE FEEDING IS BEING GIVEN TOO QUICKLY OR FORMULA IS TOO COLD

10. For continuous feeding with pump, add more fluid to bag when empty.

Check rate and flow periodically and adjust if needed.

11. When single feeding is completed (bag empty), clamp feeding bag tubing.

12. Flush button with water if ordered.

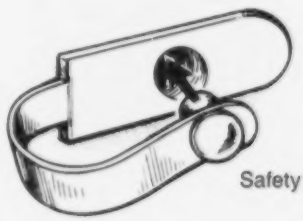
This clears the button of any feeding fluid.

13. Remove adaptor and tubing from button.

14. Wash hands.

Wash feeding bag, tubing and syringe in soapy water. Rinse well.

15. Close safety plug.



16. Refer to child-specific guidelines regarding activity after feeding.

17. Document feeding, medication and feeding tolerance in log.

Report to parent any change in the child's usual pattern.

Possible Problems That Are Not Emergencies

Observations	*Reason/Action*
Color changes/breathing difficulty	*This may be due to aspiration of feeding into lungs.* *Stop feeding immediately. Call nurse if not present. Assess situation. If problem continues, institute emergency plan and notify parents.*

Possible Problems That Require Immediate Attention

Nausea and/or cramping	*Check rate of feeding; may need to decrease rate.* *Check temperature; may be too cold—stop feeding; let feeding get to room temperature, then administer. If problem continues, notify school nurse, parent and doctor.*
Vomiting	*If you have checked all of the above, stop feeding, call school nurse, parent and doctor.*
Blocked gastrostomy button	*May be due to inadequate flushing or very thick food or fluid. Flush with warm water after feeding or medication. If blockage remains, contact parents.*
Bleeding/drainage/redness/irritation	*Check skin around gastrostomy button site daily. Clean stoma site if leakage of food/fluid/medication comes in contact with skin.* *Refer to child-specific guidelines for cleaning instruction. Turn button in a complete circle with each cleaning.* *Dry stoma site well; open to air to facilitate drying.*
Leaking of stomach contents	*May be due to a problem with the anti-reflux valve (sticking or broken).*
Gastrostomy button falls out	*This is not an emergency. Save the button for re-insertion. In some children whose tract may close quickly, the G-tube button may need to be inserted within 1–2 hours. Cover gastrostomy site with bandaid or clean dressing. Contact parents and physician.*

General Information Sheet

Children With Gastrostomy Feeding Buttons

Dear (Teacher, lunch aide, bus driver, etc.):

_____ (Student) has a condition that requires a gastrostomy feeding button. This is a simple and safe way of giving food, medicines and fluids directly into the stomach, because the child is unable to take these by mouth.

The gastrostomy is a surgical opening into the stomach. A gastrostomy feeding button is put into the surgical opening. It is held in place from the inside of the stomach and is capped between feedings to prevent leakage. These gastrostomy buttons do not normally cause the child discomfort and are covered by clothing.

The child may receive feedings or medication through the gastrostomy feeding button as needed during the school day in the classroom, the lunchroom or the health office. Unless he or she has a condition that otherwise would interfere with participation in physical education or other activities, there is no reason why he or she cannot participate fully. Special consideration may be needed, however, for field trips or other activities where the child may not be able to receive a regularly scheduled feeding.

If the child has any problems with his/her gastrostomy feeding button, contact:

_____

_____

_____

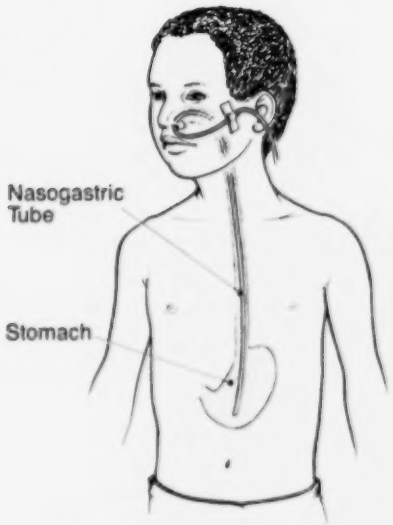
These staff members have been trained to deal with any problems that may arise with this child.

For more information about gastrostomy buttons, or the student's needs, consult the school nurse or parent.

Nasogastric Tube

Purpose

An NG-tube is a rubber or plastic tube that passes through a nostril, down the throat and esophagus (food pipe), and into the stomach. It is used to give liquids, medication, and feedings when a person is unable to take these by mouth. Some children will have tubes inserted for each feeding. Others will have tubes in place for several weeks.



Suggested Settings

The child may be fed in the lunchroom with the other children or in the health room. The NG-tube should be inserted in the health room or in another private setting.

Suggested Personnel and Training

A registered nurse with competency-based training in appropriate techniques and problem management should do the nasogastric tube feedings. Any school personnel who have regular contact with a student with an NG-tube must receive general training, covering the child's special health care needs and potential problems, as well as how to implement an established emergency plan.

The basic skills checklist included at the end of this manual can be used as a foundation for competency-based training in appropriate techniques. It outlines specific procedures step-by-step. Once the procedures have been mastered, the completed checklist serves as documentation of training.

The Health Care Plan: Issues for Special Consideration

Each student's Health Care Plan must be tailored to individual needs. The following section covers the procedure for nasogastric tube care and possible problems and emergencies that may arise. It is essential to review it before writing the Health Care Plan.

A sample Health Care Plan is included in the Useful Documents section of this manual. It may be copied and used to develop a plan for each student. For a child with a nasogastric tube, the following items should receive particular attention:

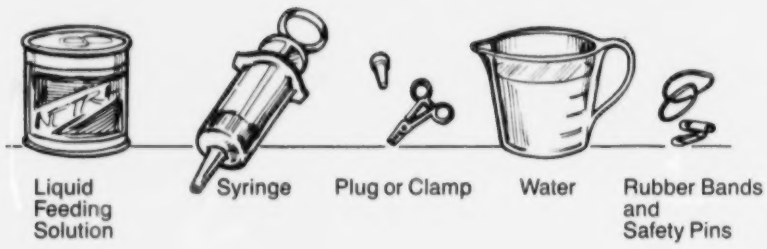
- Type of feeding child is receiving (bolus/continuous drip).
- Proper placement of the nasogastric tube.
- Activity level after feeding.
- Positioning during and after feeding.
- The need to determine gastric residuals.

Procedure for Checking Placement of the Nasogastric Tube

Procedure	*Points to Remember*
1. Explain procedure at the student's level of understanding.	*By encouraging the student to assist in the procedure, the care-giver is helping the student to achieve maximum self-care skills.*
2. Wash hands.	
3. Check first for proper tube placement.	*This should be done before every feeding.*
4. Assemble equipment: • Stethoscope • 60 cc catheter-tipped syringe	
5. Open NG-tubing.	*Unclamp or remove cap from tube.*
6. Connect 60 cc catheter-tipped syringe to the end of NG-tube.	
7. Place a stethoscope over the mid-left abdomen and gently push in 5–10 cc of air with syringe.	*A whooshing sound should be heard if NG-tube is properly placed.*
	If NG-tubing does not appear to be in place, ***DO NOT GIVE FEEDING.*** *Replacement or repositioning of the NG-tube should only be done by a nurse with appropriate training and if ordered by the student's doctor. (Check child-specific guidelines.)*
8. If ordered, gently draw back on the plunger to remove any liquid or medication that may be left in the stomach (residuals).	*Some students may not need to have residuals checked. Note the amount that was withdrawn from the feeding tube and return the contents to the stomach (if ordered). Adjust the feeding volume according to doctor's orders if a residual is present. If the residual is greater than recommended, hold feeding, wait thirty to forty-five minutes and re-check.*
9. Close the nasogastric tubing, disconnect the syringe and remove plunger from syringe.	
10. Proceed with feeding by method prescribed for student.	*Feedings are usually either* ***bolus*** *(feeding given over a short period of time by gravity) or* ***slow-drip*** *(feeding given by pump or over a long period of time by gravity).*

Procedure for Nasogastric Tube Feeding—Bolus Method

Procedure	*Points to Remember*
1. Wash hands.	
2. Assemble equipment:	

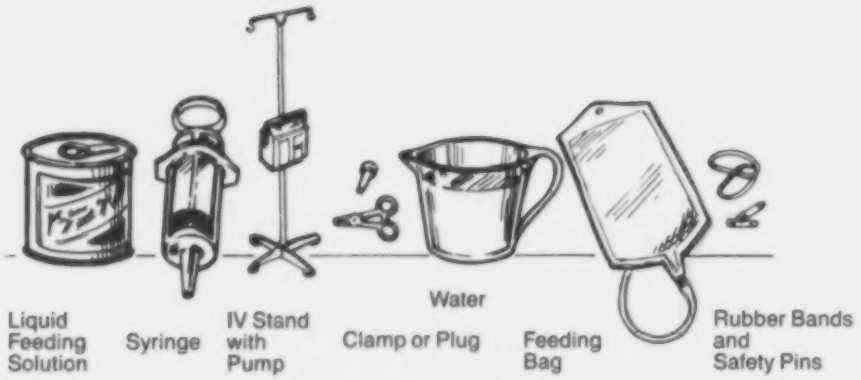


• Liquid feeding solution/formula at room temperature	
• 60 ml or cc catheter-tipped syringe	
• Clamp or cap for end of tube (optional)	
• Rubber bands and safety pins	*To secure NG-tube to clothing.*
• Water (if prescribed)	*Used to flush tubing after feeding.*
3. Position child.	*Child may be sitting or lying on right side with head elevated at a thirty degree angle. Make sure tubing is secured with tape to student's nose or cheek.*
4. Check placement of NG-tube. (Refer to page 50.)	*Do not apply undue traction or pull on NG-tubing.*
5. Remove cap or plug from NG-tube; remove plunger and insert catheter-tipped syringe into the end of feeding tube.	
6. Allow bubbles to escape if present.	*Syringe should be held six inches above level of head, or at prescribed height.*
7. Pour feeding/fluid into syringe and allow to flow in by gravity.	******BE ALERT TO ANY UNUSUAL CHANGES IN THE STUDENT'S TOLERANCE OF THE FEEDING. NAUSEA/VOMITING, CRAMPING OR DIARRHEA MAY INDICATE THAT THE FEEDING IS BEING GIVEN TOO QUICKLY OR FORMULA IS TOO COLD******

8. Continue to pour feeding into syringe as contents empty into stomach.	*Depending on the age and capabilities of the student, have him/her assist with the feeding by holding syringe or pouring fluid into it.*
9. Raise or lower syringe to adjust flow to prescribed rate.	
10. When feeding is completed, pour prescribed amount of water into syringe and flush tubing.	*This will clear tubing of feeding and medication.*
11. Clamp tubing; remove barrel of syringe and reinsert cap into end of tubing.	*Wash catheter-tipped syringe with warm water and mild soap and store in clean area.*
12. Make sure tubing is securely attached to cheek.	*Make sure NG-tubing is not pulling on nose or causing discomfort.*
13. Wash hands.	
14. Refer to child-specific guidelines regarding activity after feeding.	
15. Document feeding medication, residual amount and feeding tolerance on log sheet.	*Report any problems to parents.*

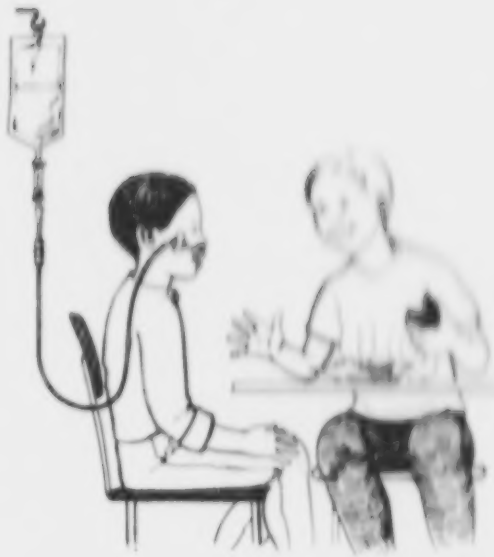
Procedure for Nasogastric Tube Feeding—Slow Drip and/or Continuous Feeding by Pump

Procedure	*Points to Remember*
1. Wash hands.	
2. Assemble equipment:	



• Liquid feeding solution/formula at room temperature	*Some children may get cramps if feeding solution is too cold.*
• 60 ml or cc catheter-tipped syringe	
• Feeding pump (optional)	
• IV stand (optional)	
• Clamp or cap for end of tube (optional)	
• Feeding bag	
• Rubber bands and safety pins	*To secure NG-tube to clothing.*
• Water (if prescribed)	*Used to flush tubing after feeding.*
3. Position student.	*Student may be sitting or lying on right side with head elevated at a thirty degree angle. When positioning student, make sure NG-tube is secured to nose or cheek.*
4. Check placement of NG-tube. (Refer to page 50.)	
5. Remove cap or plug from NG-tube and insert a catheter-tipped syringe with plunger removed into the end of feeding tube.	*Do not apply undue traction or pull on nasogastric tubing.*
6. Allow bubbles to escape if present.	
7. Pour feeding/fluids into feeding bag, run feeding through bag and tubing to the tip. Clamp.	*If medication is prescribed, administer before feeding.*
8. Hang bag on pole at height required to achieve prescribed flow. If a feeding pump is used, place tubing into pump mechanism and set for proper flow rate.	*School activities may continue during feeding as long as the child is sedentary.*
9. Insert tip of feeding bag tube into NG-tube; tape securely. Unclamp NG-tube.	

10. Open clamp of feeding bag tubing and adjust until drips flow at prescribed rate.



11. For **continuous feeding with a pump,** add more fluid to bag when empty.

Check rate and flow periodically and adjust if needed. Check for residual as ordered.

12. When **single** feeding is completed (bag empty), clamp feeding bag tubing and clamp NG-tube.

13. Disconnect feeding bag from NG-tube.

14. Unclamp NG-tube and flush with water if ordered, using a syringe.

This clears the tubing of any feeding fluid.

15. Clamp and cap NG-tube.

16. Make sure tubing is securely attached to cheek.

17. Wash hands.

18. Wash feeding bag and syringe in soapy water. Store in a clean area.

19. Document feeding and/or medication, residual volumes, and feeding tolerance in log.

The feeding may be disconnected while the child is being transported to and from the school program.

20. Refer to child-specific guidelines regarding activity after feeding.

Possible Problems That Require Immediate Attention

Observations	***Reason/Action***
Gagging, choking	*This may be due to improper nasogastric-tube placement. Follow steps for checking NG-tube placement.* *If NG-tube is not in proper position, remove tube or follow child-specific guidelines for repositioning.*
Color changes/breathing difficulty **when not receiving feeding**	*Color changes or breathing difficulty are not always related to NG-tube feeding. In addition to checking NG-tube placement, it is important to carefully assess the child for other problems.*
Color changes/breathing difficulty **while receiving feeding**	***STOP FEEDING IMMEDIATELY.*** *This may be due to improper NG-tube placement. Follow steps for checking NG-tube placement. Carefully assess the child for other problems.* *This may be due to aspiration of feeding into lungs.*
Respiratory distress continues	*Call for help and initiate emergency plan.*
Nausea and/or cramping	*Check rate of feeding; may need to decrease rate. Check temperature; may be too cold—stop feeding and let feeding get to room temperature, then administer. If problem continues, notify school nurse, parent and doctor.*
Vomiting	*Stop feeding and refer to child-specific guidelines.* *Vomiting may not be due to NG feeding. It is important to carefully assess the child for other problems.*
NG-tube falls out	*Notify parents/physician.*

General Information Sheet

Children with Nasogastric Tubes

Dear (Teacher, lunch aide, bus driver, etc.):

_____ (Student) has a condition that requires a nasogastric tube (NG-tube). This is a simple and safe way of giving food, medicine and fluids directly into the stomach, because the child is unable to take these by mouth. The NG-tube is a soft rubber or plastic tube which is put into a nostril and down the foodpipe into the stomach.

The tube is held to the skin by tape so it will not usually come out, and is clamped in between feedings to prevent leakage. Once they are in place these tubes should not cause any discomfort. The child may receive feedings or medication through the NG-tube as needed during the school day in the health office, the lunch room or the classroom. Usually he or she will be able to participate in physical education or other activities. Special consideration for timing or location of feedings may be needed, however, for field trips or other activities when the child may not be able to receive a regularly scheduled feeding.

If the student has any problems with his/her nasogastric tube, contact:

_____

_____

_____

These staff members have been trained to deal with any problems that may arise with this student.

For more information about gastrostomy tubes, or the student's needs, consult the school nurse or parent.

Intravenous Lines

Circulatory System

Structure and Function

The circulatory system delivers oxygen and nutrients to different organs of the body and transports carbon dioxide and waste products to the lungs and kidneys for elimination.

Heart: Has four chambers and physiologically is divided into two sides. The atria are the small collection chambers that collect blood from the veins. The ventricles are the larger, more muscular chambers that pump blood through the arteries.

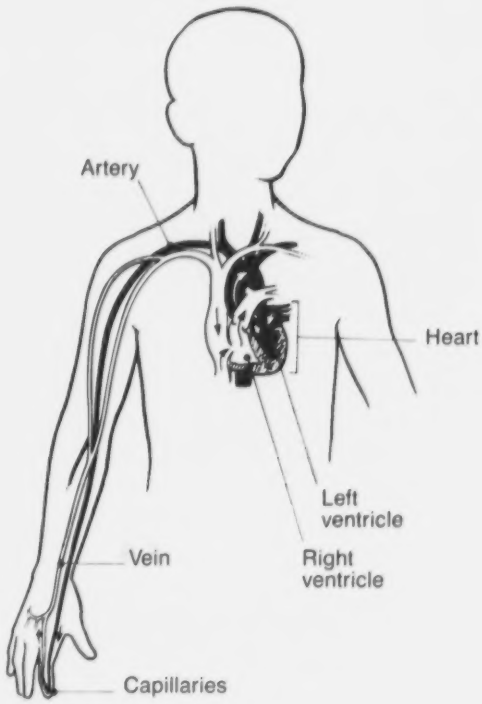
Arteries: Blood vessels with muscular walls that take the blood from the heart to organs in the body. The largest artery, the aorta, is closest to the heart. As the arteries get farther away from the heart they become smaller, with less muscle in their walls.

Capillaries: Tiny channels, one blood-cell wide, that connect arteries to veins. These vessels are where the exchange of oxygen and nutrients with carbon dioxide and waste products occurs in every organ.

Veins: Thin blood vessels that take blood away from organs toward the heart. Some veins in arms and legs have one-way valves that keep the blood from pooling in the hands and feet. As the veins get closer to the heart, they become larger. Central veins are those veins inside the abdominal or chest cavities.

The right side of the heart collects blood returning from the body via the large veins, the vena cavae, in the right atrium. The blood then enters the right ventricle through a valve and is pumped to the lungs through the pulmonary artery, where it loses carbon dioxide and picks up oxygen.

The oxygenated blood from the lungs enters the left atrium through the pulmonary veins. It then crosses a valve into the left ventricle, which pumps the blood out to the body through the aorta.

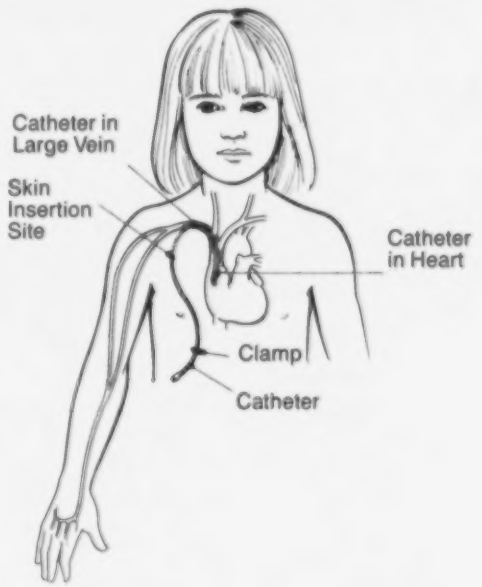


Central Venous Line

Purpose

A CVL (Central Venous Line) is a long-term IV catheter that is surgically inserted into a deep, large vein in the neck or the chest, usually near the heart. The middle portion of the catheter has a dacron "cuff" that anchors the catheter under the skin. This also helps to prevent migration of bacteria up the catheter. The clamp or cap on the end of the tubing prevents blood loss and air entry into the vein.

The exit site (where catheter comes out of skin) of the catheter requires meticulous cleaning and is always covered with a sterile dressing. Usually this is on the upper chest area. On occasion, the exit site for the central venous line will be on the abdomen or groin. Some children may have a type of CVL where the access site (or port) is entirely covered by the skin. Children with this type of CVL will not have an exit site. CVLs do not cause the child any discomfort if they are properly secured.



Children usually have these lines placed when there is a need for long-term delivery of intravenous food and/or medication. These children may be receiving chemotherapy, TPN (total parenteral nutrition) or antibiotic therapy. A central venous line may also be used when there is a need to "rest" the bowel or when the intestines are unable to absorb adequate nutrients.

Suggested Setting

As with all medical conditions, every effort should be made to protect the child's privacy. Procedures such as dressing reinforcements or changes should be carried out in a private area of the health office. Since CVLs are usually covered by clothing, children with CVLs should be able to participate in regular school activities. However, participation in physical education should be determined on an individual basis.

Suggested Personnel and Training

Dressing changes should be done by a registered nurse with proven competency-based training in appropriate techniques and problem management. Any school personnel with regular contact with a student who has a CVL must receive general training that covers the child's specific health care needs and potential problems, and how to implement the established emergency plan.

The basic skills checklist included at the end of this manual can be used as a foundation for competency-based training in appropriate techniques. It outlines specific procedures step-by-step. Once the procedures have been mastered, the completed checklist serves as documentation of training.

The Health Care Plan: Issues for Special Consideration

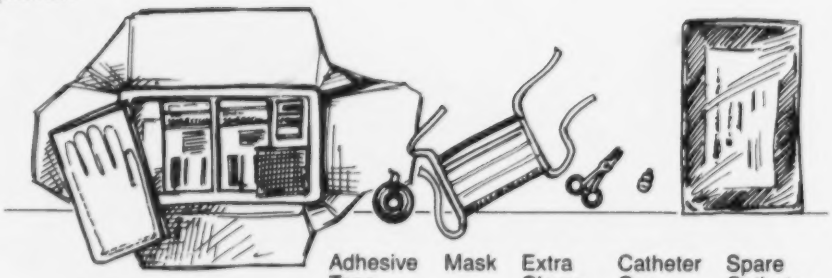
Each student's Health Care Plan must be tailored to individual needs. The following section covers the procedure for CVL dressing change as well as possible problems and emergencies that might arise. It is essential to review it before writing the Health Care Plan.

A sample Health Care Plan is included in the Useful Documents section of this manual. It may be copied and used to develop a plan for each student. For a child with a CVL, the following items should receive particular attention:

- The school nurse should be aware of the student's underlying condition and potential problems associated with the condition or treatment (such as chemotherapy).
- An additional dressing kit with a spare clamp should be available.
- The school staff who have regular contact with the student should be aware of the CVL.
- A fever needs to be investigated.
- Universal precautions should be followed when handling the line. (See page 17.)
- No one should touch the tubing or the dressing unless a complication occurs.

Procedure for CVL Dressing Change

Procedure	***Points to Remember***
1. Wash hands.	
2. Assemble equipment:	



Catheter dressing kit or equivalent contains:

- sterile gloves
- alcohol swabs
- povidone iodine swabs
- povidone ointment
- sterile gauze

Different dressing kits may be used that do not contain all of these components. Those items not included in the kit should be supplied separately.

Also needed:

- adhesive tape or transparent dressing
- mask
- extra clamp
- catheter cap
- spare catheter dressing kit

3. Explain the procedure to the child according to the level of understanding.
4. Put on a mask.
5. Open the catheter dressing kit on a clean work surface. — *Although not all CVL dressing changes are done using sterile procedures, children receiving TPN **do** have sterile dressing changes.*
6. Assist child in removing clothing to uncover dressing. — *Dressing change should be carried out in a private area of the health office.*
7. Position the child. — *The child may be sitting or lying flat.*
8. Remove wet or soiled dressing from the catheter exit site. — *Discard in the appropriate receptacle.*
9. Inspect the skin around the catheter for redness, swelling, or fluid drainage. — *This may be a sign of infection. If you notice any of these symptoms, notify the physician and parents.*
10. Put on sterile gloves.

11. With an alcohol swab-stick, clean skin, starting at the center next to the catheter, working outward in widening circles. Repeat the cleaning process two more times.

Be sure to clean approximately two inches of the catheter itself, starting at the exit site. Allow the alcohol solution to dry about 30 seconds.

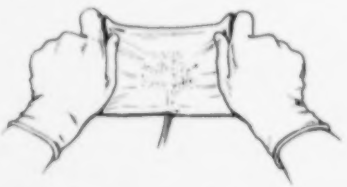
12. Repeat the same procedure using povidone iodine swab sticks.

    Allow the povidone iodine to dry about 30 seconds before proceeding.

13. Gently pat the skin dry with sterile gauze.
14. Apply a small dab of povidone-iodine ointment to the catheter exit site.
15. Lay the gauze over the ointment on the catheter exit site.

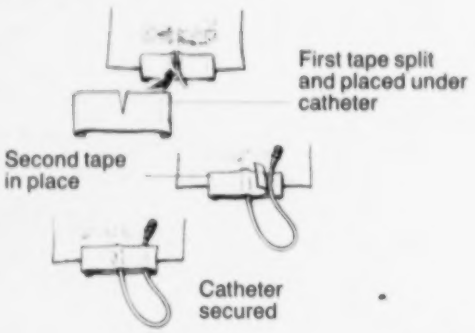
Some children may have a nonadhering type of dressing placed or a split sponge.

16. Using a layer of transparent dressing, cover the gauze and secure the dressing to the skin.



17. Using tape, secure catheter at a second point to reduce strain on the catheter.
    - Place first piece of tape as shown.
    - Place a second piece of tape over the first, sealing it along the catheter.
    - Secure catheter with free end of tape.

This may be done in a different manner than illustrated.



18. Remove gloves and wash hands.

Report to parent any changes in the child's usual pattern.

19. Document procedure and problems in log.

Possible Problems That Require Immediate Attention

Equipment needed for emergencies:

- Small smooth-edged clamp
- Sterile gauze
- Adhesive tape
- Sterile gloves (optional)
- Alcohol swabs
- Betadine swabs
- Dressing kit
- Mask

Observations	*Reason/Action*
Blood in tubing or bleeding from the end of the tubing	*Most children will have their CVLs capped while in school. If blood is noted in the line or coming from the end of the line,* ***check to see if the clamp is open.*** *If so, simply re-close it. If the clamp has broken or is not functioning properly, the tubing should be firmly pinched closed and the physician and parent contacted immediately.*
The tubing breaks	*Immediately pinch tubing closed with fingers by bending tubing onto itself or clamping between exit site and the break.*
The child is complaining of chest pain or difficulty in breathing	*Have him/her lie on the left side to prevent an air bubble from entering the heart.* *Once the tubing is securely clamped and not leaking, transport the child via wheelchair or bed with wheels to the school nurse's office.* ***DO NOT LET THE CHILD WALK.*** *Put on sterile gloves (and a mask if you have a cold). Cleanse the broken end of the tubing with alcohol swabs and cover the end with sterile gauze and tape.* *Simply covering the broken end with sterile gauze will suffice in an emergency. (Many times, a line can be repaired without having to replace the entire central venous line.)* ******THE CHILD SHOULD BE TRANSFERRED AS SOON AS POSSIBLE TO THE APPROPRIATE HOSPITAL EMERGENCY ROOM. IF THE SCHOOL NURSE IS NOT AVAILABLE, PINCH TUBING WITH FINGERS OR CLAMP AND CALL EMTs/ AMBULANCE. NOTIFY THE PARENTS AND THE PHYSICIAN IMMEDIATELY.*****

The CVL is pulled or falls out	***STAY CALM. REASSURE CHILD. Whoever is at the site first should cover the CVL exit site.*** *Inspect the exterior of the dressing. If the dressing is intact and the tape still holds the looped catheter, probably no significant trauma to the child or the line has occurred. The parent and the physician should be notified nonetheless.* *If the tape or dressing have been disrupted, however, they should be taken off and the exit site inspected.* *If the exit site looks disturbed, replace the dressing as outlined above.*
The catheter is out or appears to be broken off at the skin	*If possible, clamp the catheter. Apply firm pressure to exit site promptly and notify physician and parent immediately.*
The catheter tubing is broken	*Clamp the catheter above the break. Notify the school nurse, who will wrap the broken end with a sterile gauze. Notify parent and physician immediately. Be prepared to initiate emergency plan.* *Catheter may be repairable.*
The child complains of chest pain or difficulty in breathing; facial color may appear different	*Make sure the catheter is capped and clamp immediately. Check to see if the line is broken.* *Have him/her lie on the left side to prevent an air bubble from entering the heart.*
The child develops a fever, redness at the CVL site, drainage, increased fatigue, irritability, or headache	*The parents and/or physician should be called at once. These are indications of infection.*

SAFETY PRECAUTIONS:

- **NO ONE** should touch the tubing or the dressing unless complications occur.
- **ALWAYS** wash your hands with soap and water before and after handling line or dressing unless an emergency situation occurs.

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General Information Sheet

Children with Central Venous Lines

Dear (Teacher, lunch aide, bus driver, etc.):

_____ (Student) has a condition that requires a central venous line (CVL). This is a plastic tube like an IV, which has been placed by a surgeon into a large vein close to the heart. A child may have a CVL if he or she is unable to digest food or requires special medications. The tubing comes out of the skin on the chest. This exit site is covered by a bandage to protect it and to keep the tubing clean. The CVL does not cause any discomfort if it is properly secured.

Some students will have the tubing connected to an intravenous fluid solution, but most will have their CVL "capped" or clamped while they are in school or in transport. In most cases routine CVL care will be carried out at home or in the health room, unless an emergency occurs.

Most students with CVLs are able to participate in regular school activities. Participation in physical education and any restrictions must be determined by the doctor and the parents. Children with CVLs should avoid having the exit site bumped or the tubing pulled on.

The CVL is covered by a bandage as well as the child's clothing. **No one** should touch the tubing or dressing unless a complication occurs.

If the student has any problems with his/her CVL, contact:

_____

_____

_____

These staff members have been trained to deal with any problems that may arise with this student.

All staff who have contact with students with CVLs should be familiar with the emergency plan and how to initiate it in their setting.

For more information about CVLs, or the student's needs, consult the school nurse or the parents.

Heparin Lock

Purpose

The heparin lock is a means of maintaining intravenous access when the child requires intermittent medication or fluids. A special plug that contains heparinized saline is inserted into the end of the intravenous catheter. The heparinized saline is replaced regularly by injecting a prescribed dose into the plug. This allows the child more mobility. These IVs are used for short-term courses of medication or fluids.

Suggested Settings

Procedures such as dressing reinforcements, changes, or heparin flushes should be carried out in the health room. The child's activity may be limited to prevent dislodging the IV.

Suggested Personnel

A registered nurse with proven competency-based training in appropriate techniques and problem management should administer heparin flushes and provide IV care. Any school personnel with regular contact with a student with a heparin lock or IV must receive general training that covers the child's special health care needs and potential problems, as well as how to obtain assistance if problems occur.

The basic skills checklist included at the end of this manual can be used as a foundation for competency-based training in appropriate techniques. It outlines specific procedures step-by-step. Once the procedures have been mastered, the completed checklist serves as documentation of training.

Health Care Plan: Issues for Special Consideration

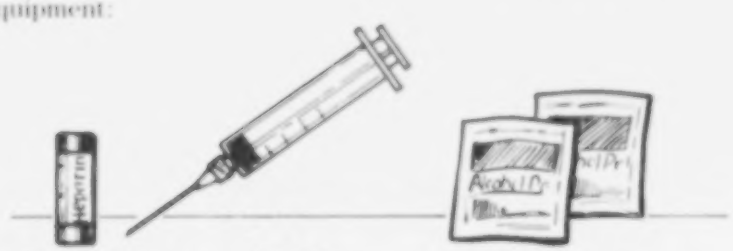
Each student's Health Care Plan should be tailored to individual needs. The following section covers the procedures for heparin lock flushes and possible problems that might arise. It is essential to review it before writing the Health Care Plan.

A sample Health Care Plan is included in the Useful Documents section of this manual. It may be copied and used to develop a plan for each student. For a student with a heparin lock the following items should receive particular attention:

- Universal precautions must be followed when handling the site. (See page p. 17.)
- Protection of the IV site from bumping or other trauma.
- Signs of IV site infiltration and infection.
- Safe storage and disposal of intravenous supplies.

Procedure for the Administration of a Heparin Flush

Procedure	*Points to Remember*
1. Assemble equipment:	



- Intravenous catheter (in place)
- Heparinized saline (see child-specific guidelines for dosage)

Heparinized saline is available in 2 cc single-dose vials with one unit of heparin per cc of saline.

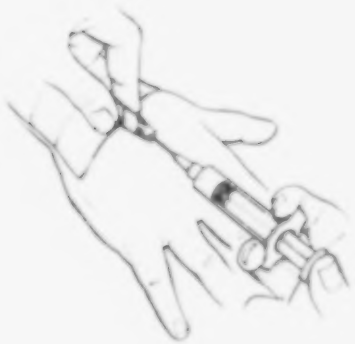
- 3 ml syringe with a number 21 to 23 gauge needle
- 2 alcohol swabs

2. Explain procedure to child according to his/her level of understanding.

By encouraging the child to assist in the procedure, the care-giver is encouraging the child to achieve maximum self care skills.

3. Wash hands.

4. Cleanse top of heparinized saline container with alcohol swab.



5. Draw prescribed dosage of heparinized saline into syringe.

6. Cleanse catheter hub with alcohol swab.

7. Slowly inject prescribed dosage of heparinized saline.

8. Remove syringe and needle, and dispose of properly.

9. Wash hands.

10. Document the dosage, time and condition of IV site on log sheet.

Report to parent any change in the child's usual pattern.

Possible Problems with Heparin Lock

Observations	*Reason/Action*
IV dressing wet, leakage of blood or fluid	*Male adaptor may be dislodged. IV catheter may be dislodged or IV site is infiltrated.* *Carefully remove dressing, if IV is intact, apply new dressing. Reconnect adaptor to catheter if disconnected and apply new dressing. If IV is not intact, consult parent and or doctor, and then follow guidelines for removal of IV if ordered.*
IV site is tender, warm, swollen, red	*The IV may be displaced or dislodged, causing the intravenous fluid to enter the tissue. Notify the doctor and or parent, who will give further instructions. If the IV is to be removed, follow guidelines for removal.*
Difficulty injecting heparinized saline into catheter	*Needle may not be in hub properly. Catheter may be clotted. IV may be infiltrated.* *Make sure needle is in hub properly. Gently press on plunger; if no results, stop injecting.* *Inspect IV site; if unable to flush, or if IV site is infiltrated, notify physician and or parent. If the IV is to be removed, follow guidelines for removal.*
Redness streaking up arm along vein	*May be phlebitis (infection of vein.) Notify parent and or doctor. Remove IV if ordered.*

Procedure for Removal of IV Catheter

Procedure	*Points to Remember*
1. Assemble equipment: • Sterile gauze • Band-aid	*Explain procedure to child and have child participate as much as possible.*
2. Wash hands; put on gloves.	
3. Open sterile gauze and band-aid.	
4. Remove dressing, being careful to secure catheter with one hand while removing tape with the other.	
5. Hold the hub or end of the catheter; slowly remove from vein.	
6. Apply pressure to the IV site.	*If the child is prone to bleeding, hold pressure to site for at least five minutes or more until bleeding stops.*
7. Apply band-aid.	
8. Dispose of catheter in appropriate receptacle.	
9. Remove gloves; wash hands.	
10. Document procedure and condition of site.	*Report to parent any change in the child's usual pattern.*

General Information Sheet

Children With Heparin Locks

Dear (Teacher, lunch aide, bus driver, etc.):

_____ (student) has a condition that requires an intravenous line or heparin lock. The intravenous line is a tiny plastic tube placed in the vein of the arm or hand. This is a way of giving the child medication or fluids. When the child is not receiving continuous intravenous fluids or medications, a special plug (heparin lock) is inserted into the end of the intravenous catheter to allow more mobility while keeping the tubing usable. The IV is inserted in the child's vein by a doctor or nurse, and held in place by tape.

The child can receive medications at home, school or the hospital. The child's activities may be limited so as not to dislodge the tube.

If the child has any problems with his/her heparin lock, contact:

_____

_____

_____

These staff members have been trained to deal with any problems that may arise with this child.

For more information about intravenous lines or heparin locks, or the needs of this student, consult the school nurse or parent.

Clean Intermittent Catheterization

Purpose

Clean intermittent catheterization (CIC) is a procedure used to empty the bladder. CIC helps prevent urinary tract infections and wetting in people who have difficulty emptying the bladder. CIC also prevents wetting due to overflow incontinence, a condition in which urine overflows the bladder and dribbles out the urethra. When the bladder remains filled with stagnant urine for long periods of time, it may lead to rapid bacterial growth and infection. Catheterizing the bladder every few hours eliminates urine before bacteria can multiply to cause an infection.

CIC is often used when the nerves that stimulate the bladder do not function properly. For instance, the condition called neurogenic bladder is associated with myelodysplasia (spina bifida) and other conditions in which the nerves from the spinal cord to the bladder are damaged, such as spinal injuries due to accidents.

Because of the nerve damage, the bladder is either completely or partially unable to empty, leading to:

- Risk of infection.
- Possible back-up of urine to the kidney resulting in kidney damage.
- Incontinence (lack of control of urine leading to wetting).

Suggested Settings

Clean intermittent catheterization can be done in regular toilet facilities in the home, the school, or the hospital. This may also be done in the nurse's office or any other facility where the child is assured privacy. If recommended sites are not private, appropriate adaptations (such as screens or doors) should be made.

If toilet facilities are used by the student, they need to be wheelchair accessible, and should have railings or supports for the child who needs assistance.

Some children may need to lie down while being catheterized; a cot or bed in the health room would be appropriate.

Suggested Personnel and Training

An adult with proven competency-based training in appropriate techniques and problem management can do this procedure safely and effectively. All children should be encouraged to learn the procedure and do it themselves if able. It is important to recognize that if a child does self-catheterization, he or she may still need some supervision. School personnel who have regular contact with the student who receives clean intermittent catheterization should receive general training, which covers the child's special health care needs and potential problems, as well as how to obtain assistance if problems occur.

The basic skills checklist included at the end of this manual can be used as a foundation for competency-based training in appropriate techniques. It outlines specific procedures step-by-step. Once the procedures have been mastered, the completed checklist serves as documentation of training.

The Health Care Plan: Issues For Special Consideration

Each student's Health Care Plan must be tailored to individual needs. The following section covers the procedure for clean intermittent catheterization and possible problems and emergencies that may arise. It is essential to review it before writing the Health Care Plan.

A sample Health Care Plan is included in the Useful Documents section of this manual. It may be copied and used to develop a plan for each student. For a child who requires a catheterization, the following items should receive particular attention:

- Medications that would affect urine color, amount, etc.
- Flexible timing of catheterization to accommodate classroom scheduling, field trips, and other school events.
- Fostering independence in performing the procedure, depending on the child's ability.
- An extra set of clothing should be kept in the educational setting.
- Baseline status including urine color, amount, pattern of continence.
- Position of child during catheterization.
- Child's tendency to urinary tract infections.

Clean Intermittent Catheterization

Urinary System

Structure and Function

The urinary system filters waste material from the blood and removes it from the body as urine.

Kidneys: Two bean-shaped organs, one at each side of the spine at the back of the upper abdomen, which regulate the amount of water in the body. Ninety percent of the water that the kidneys remove from the blood is recycled back into the blood, after filtering out waste.

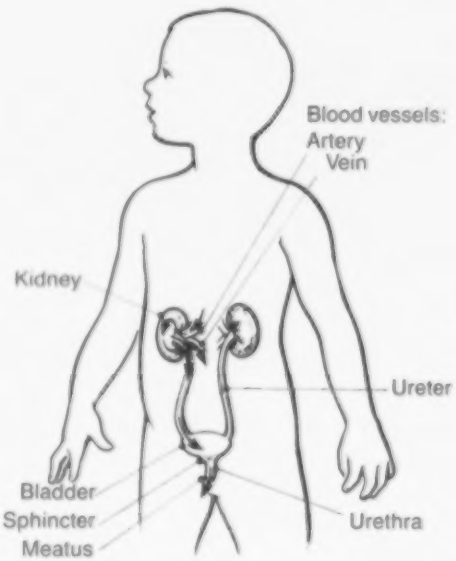
Blood Vessels: Renal arteries carry blood from the main artery to the kidneys where waste is filtered out; the renal veins take cleansed blood away from the kidneys.

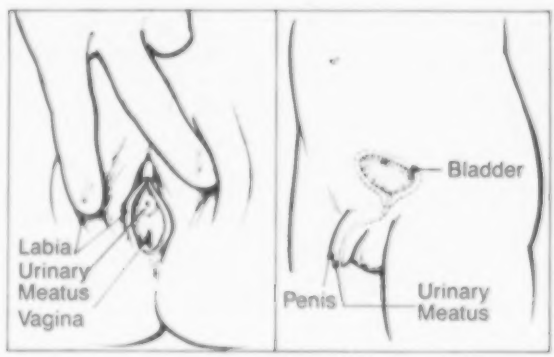
Ureters: Narrow tubes that conduct the waste liquid (urine) from the kidneys to the bladder.

Bladder: Reservoir for storing the urine until it is ready to be discharged from the body.

Urethra: Tube leading from the bladder to the outside opening of the body through which the urine is discharged.

Meatus: The external opening.
- In girls, between the labia, just above the vagina.
- In boys, at the tip of the penis.





Procedure for Clean Intermittent Catheterization—Male

Procedure

1. Wash hands with soap and water. Put on gloves.

2. Explain the procedure to the child at his level of understanding. Have him do as much of the procedure as he is capable of, with supervision as needed.

3. Assemble equipment:

Lubricant | Catheter | Cleansing supplies | Catheter storage bag | Container | Gloves

- Lubricant (K-Y jelly, Lubrifax, Surgel)
- Catheters (plastic, rubber)
- Wet wipes or cotton balls (non-sterile) plus mild soap and water
- Storage receptacle for catheter
- Container for urine
- Gloves (if person other than child does procedure).

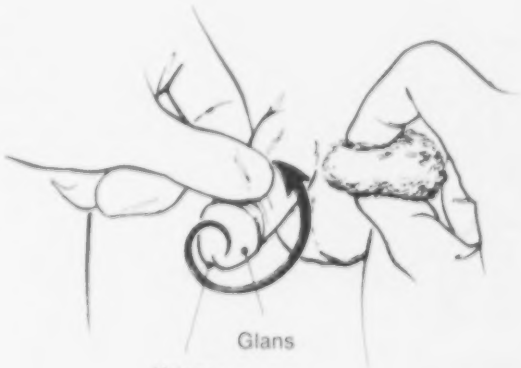
4. Position the child.

5. Depending on his age, show the child the location of the urethral opening.

6. Cleanse the penis in the following manner:

   a. Hold the penis below the glans at a 45 degree angle.

   b. If the child is not circumcised, retract the foreskin.



   c. Wash the glans with soapy cotton balls. Begin at the urethral opening; in a circular manner, wash away from the meatus. Repeat twice. Use a clean cotton ball each time you wash the penis.

Points to Remember

If student does procedure unassisted, gloves are not needed.

By encouraging the child to assist in the procedure, the care-giver is helping him to achieve maximum self-care skills.

He may be catheterized lying, standing or sitting. If able, a boy may stand at the toilet. If unable to sit or stand, he may lie on his back. This procedure requires a receptacle to catch the flow of urine from the catheter.

Always start at the meatus and wash toward the base of the penis. This helps remove bacteria from the area.

7. Lubricate the tip of the catheter with water soluble lubricant.

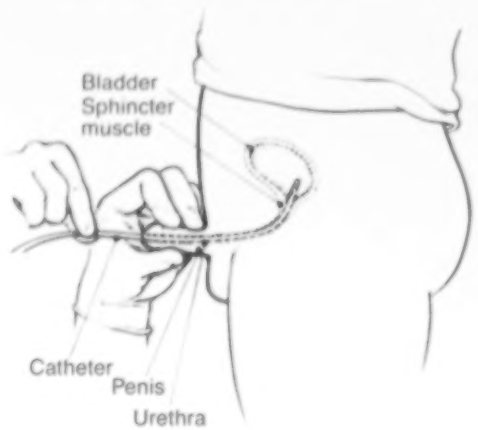
8. Locate the urethral opening. Hold the tip of penis erect and insert catheter gently into the urethral opening. Some resistance may be met at the bladder sphincter. Use gentle but firm pressure until the muscle relaxes.

******DO NOT FORCE CATHETER. IF YOU FEEL UNUSUAL RESISTANCE, NOTIFY THE PARENT.******

9. Insert the catheter until there is a good flow of urine. When the flow stops, insert catheter slightly more and then withdraw a little to make sure all urine is drained. Rotate the catheter so that catheter openings have reached all areas of the bladder.

   It is also helpful to have the child bear down a couple of times while the catheter is in place. If you have been trained to do so, apply external manual pressure to encourage the urine flow until the flow stops. This must be done with the catheter in place.

Make sure the other end of the catheter is either in a receptacle to catch urine or over the toilet.



10. When bladder is emptied, pinch catheter and withdraw.

This prevents urine still in the catheter from flowing back into the bladder.

11. If the child is not circumcised, pull the foreskin over the glans when finished.

12. Wash, rinse and dry the catheter if it will be used again. Store in an appropriate container.

13. Measure and record the urine volume if ordered. Dispose of urine and wash receptacle.

14. Remove gloves and wash hands with soap and water.

15. Note in your log that the procedure was done.

Report to the parent any change, such as cloudy urine, mucus, blood, foul odor, color changes or unusual wetting between catheterizations. These are signs of infection.

Procedure for Clean Intermittent Catheterization—Female

Procedure

1. Wash hands with soap and water. Put on gloves.

2. Explain the procedure to the child at her level of understanding. Have her do as much of the procedure as she is capable of, with supervision as needed.

3. Assemble equipment:

Lubricant Catheter Cleansing supplies Catheter storage bag Container Gloves

- Water-soluble lubricant (K-Y jelly, Lubrifax, Surgel)
- Catheters (plastic, rubber)
- Wet wipes or cotton balls (non-sterile), plus mild soap and water
- Storage receptacle for catheter
- Container for urine.
- Gloves (if person other than child is to do procedure)
- Mirror

4. Position the child.

5. Depending on her age, use mirror to show the child the location of the urethral opening.

6. Separate the labia (lips) and hold open with fingers. Cleanse, in a direction from the top of the labia toward the rectum. Wash three times: once down each side and once down the middle. Use a clean cotton ball each time.

Points to Remember

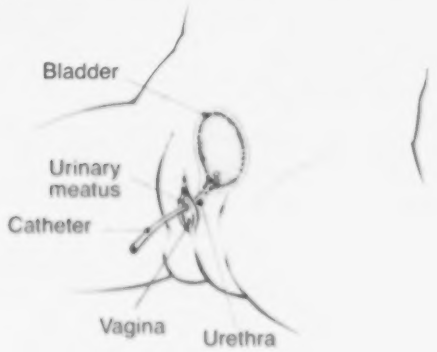
If student does procedure unassisted, gloves are not needed.

By encouraging the child to assist in the procedure, the care-giver is helping her to achieve maximum self-care skills.

She may be catheterized lying or sitting. If able, girls may sit on the toilet with legs straddled. A child unable to sit may lie on her back. This procedure requires a receptacle to catch the flow of urine from the catheter.

7. Locate the urinary meatus (opening). Gently insert the catheter until you obtain urine.

   The female urethra is short and straight. Keep the other end of the catheter over the toilet or the receptacle.



8. When urine flow stops, insert catheter slightly more. If no more urine is obtained, withdraw it slightly, rotate catheter so that catheter openings have reached all areas of the bladder.

   It's also helpful to have the child bear down a couple of times to insure that all urine has been completely drained. If you have been trained to do so, apply manual external pressure until the urine stops flowing. This must be done with catheter in place.

9. When bladder is completely empty, pinch catheter and withdraw. (If using metal catheter, put finger over end.)

   This prevents urine still in catheter from flowing back into the bladder during withdrawal.

10. Wash and dry catheter if it is to be reused. Store in appropriate container.

11. Measure and record urine volume if ordered. Dispose of urine and wash receptacle.

12. Remove gloves and wash hands with soap and water.

13. Note in your log that the procedure was done.

    Report to the parent any change such as cloudy urine, mucus, blood, foul odor, color changes or unusual wetting between catheterizations. These are signs of infection.

Possible Problems

Observations	*Reason/Action*
Bleeding from urethra	*This may be due to trauma of the urethra or urinary tract infection. Discontinue catheterization. Contact parent and doctor.*
Inability to pass catheter	*This may be due to increased sphincter tone caused by anxiety or spasm.* *In girls—check catheter placement. The catheter may be in the vagina. If catheter is in the vagina, do not use; use a clean catheter.* *In boys—reposition penis and use gentle but firm pressure until the sphincter relaxes.* *If unsuccessful, notify parent/doctor for further instructions.*
No urine on catheterization	*This may be due to improper placement of catheter. Check position of catheter.*
Cloudy urine, mucus, blood, foul odor, color changes or unusual wetting between catheterizations	*This may be due to a urinary tract infection. Always report to parent any changes in the child's usual pattern.*

General Information Sheet

Children Who Use Clean Intermittent Catheterization

Dear (teacher, lunch aide, bus driver, etc.):

_____ (student) has a condition that requires clean intermittent catheterization. This is a simple and safe procedure that helps the child empty his or her bladder because the bladder is unable to empty on its own. This helps to prevent wetness or urinary infections.

The child or another person empties the bladder by putting a clean, small tube (catheter) into the bladder and letting the urine drain out. This is usually done in the bathroom or in the health office. Most children need to do this every four to six hours during the day.

Unless the child has a condition that otherwise would interfere with his or her participation in physical education or other school activities, there is no reason why he or she cannot participate fully. Special consideration may need to be given to the timing of catheterization, based on the child's schedule, for field trips or other activities where the child may not have access to a bathroom. This procedure should be done in a private place. If the student has any problems, contact:

_____

_____

_____

These staff members have been trained to deal with any problems that may arise with this student.

For more information about this procedure or the child's needs, consult the school nurse for guidelines and child-specific information.

Gastrointestinal System

Structure and Function

The gastrointestinal system breaks down food into basic nutrients that can feed the cells of the body. Functionally, the gastrointestinal tract is divided into two parts—upper and lower.

The upper gastrointestinal tract is where digestion and absorption of most of the nutrients occurs. The mouth, throat, esophagus, stomach and small intestine are components of this part of the digestive tract.

The **mouth** is where processing of food starts. Chewing is important because digestion is more effective with smaller particles. The food is swallowed and passes through the throat, then through the esophagus.

The **esophagus** is a straight tube about ten inches in length. It descends from the base of the throat behind the trachea to the stomach.

The **stomach** is a curved pouch-like organ that is located under the diaphragm in the upper left portion of the abdomen. The stomach partially digests food and regulates passage of food to the rest of the gastrointestinal tract.

The **small intestine** is approximately 12 feet long. The duodenum, jejunum and ileum are parts of the small intestine. Food passes from the stomach through the small intestine, where most digestion and absorption of nutrients takes place.

The lower gastrointestinal tract consists of the **large intestine.** This is where water is reabsorbed and undigested food is consolidated into fecal waste.

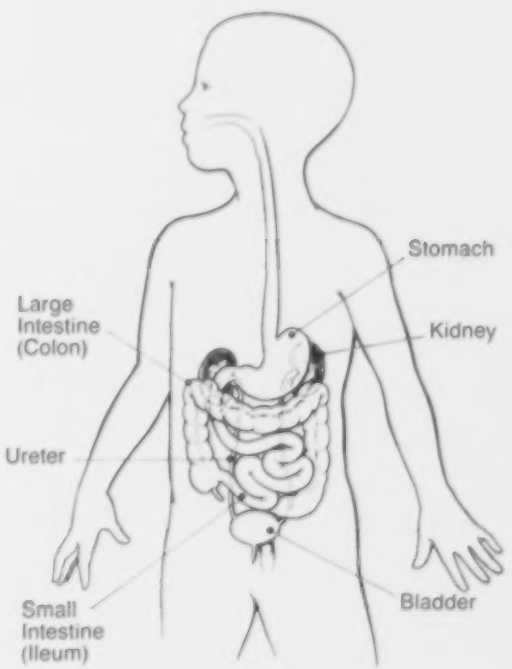
The large intestine extends from the end of the small intestine to the **rectum.** The **anus** is the opening to the outside of the body.

Function

Digestion takes place in two ways:

- Mechanical: chewing and stomach contractions break down food.
- Chemical: food is broken down by digestive acids and enzymes.

The digested food is absorbed through the lining of the intestine and then enters the bloodstream where it is carried to the cells.



Colostomy

Purpose

A colostomy is a surgical opening in the large intestine, which is used to drain feces when part of the colon is disconnected or removed due to accident or disease. The end of the remaining piece of colon is brought out to the surface of the abdomen and stitched in place after it has been folded back onto itself.

Some students have two stomas, either from a loop colostomy or from a double barreled colostomy. In these cases, the last part of the colon may not function, or only part of the colon may have been removed. One of the stomas will function as the colostomy, where the stool comes out. The other opening, which is closer to the rectum, is called a mucus fistula. No stool comes out of this stoma, only mucus, which the colon normally makes. Some students who have colostomies like this may occasionally pass mucus from their rectum when they sit on the toilet. The ostomy is covered by a bag which collects the feces.

Colostomies

Single Double barrel Loop

Stoma Care

The goal is to keep the skin and stoma clean and healthy. Good skin care is essential as discharge from the ostomy can be irritating to the skin around the stoma. A properly fitting barrier should be applied around the stoma to protect the skin from any leakage.

Suggested Settings

The child or care-giver empties the pouch in a private place, such as a bathroom or the health office and stoma care is done when needed. The bag should be emptied before it is full or if a leak occurs. Some children may want to have an extra change of clothes at school. A child should be able to participate in all school activities, including physical education.

Suggested Personnel and Training

Stoma care can be done by the student, school nurse or other adult with proven competency-based training in appropriate techniques and problem management. School personnel who have regular contact with a student with a colostomy should receive general training, covering the child's special health care needs and potential problems, as well as how to obtain assistance if problems occur.

The Health Care Plan: Issues for Special Consideration

Each student's Health Care Plan must be tailored to individual needs. The following section covers the procedure for colostomy care and possible problems and emergencies that might arise. It is essential that this section be reviewed before writing the Health Care Plan.

A sample Health Care Plan is included in the Useful Documents section of this manual. It may be copied and used to develop a plan for each student. For a child with a colostomy, the following items should receive particular attention:

- The student should have ready access to his/her equipment and a private bathroom with a sink.
- Depending on the child's ability, a goal should be to foster independence in performing his/her own colostomy care.
- The student may want to bring an extra change of clothing to school.
- The student's baseline status (stool consistency, frequency, etc.)

Procedure to Change a Colostomy Bag

Procedure

1. Explain procedure at the child's level of understanding.

2. Assemble equipment:

- Mild soap and water
- Soft cloth or gauze
- Skin preparation (see child-specific guidelines)
- Adhesive
- Scissors, if specified
- Clean bag and belt, if needed
- Measuring guide, if needed
- Clean gloves if bag is to be changed by someone other than student
- Tape, if needed

3. Wash hands and put on gloves.
4. Empty contents of bag student is wearing.
5. Carefully remove the used bag and skin barrier by pushing the skin away from the bag, instead of pulling the bag off the skin.
6. Wash the stoma area using clean cloth or gauze. **DO NOT SCRUB.**
7. Inspect skin for redness, rash, bleeding or blistering.

Points to Remember

By encouraging the child to assist in the procedure, the care-giver is helping the student to achieve maximum self-care skills.

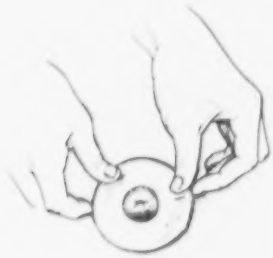
Each student should have a complete set-up at school with a spare bag.

If there is skin irritation, check child-specific guidelines. Do not put medication, ointment or adhesive on the damaged skin. Report skin irritation to school nurse and/or parent.

8. Pat stoma and skin dry.

9. If a skin barrier is used that requires fitting, measure stoma per child-specific guidelines. Place skin barrier on skin around stoma.

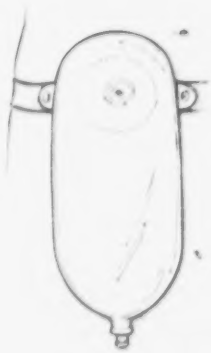
Cover stoma with gauze if necessary to prevent leakage.



10. Peel off backing from adhesive on bag, or apply adhesive to bag, if needed.

11. Remove used gauze and discard in appropriate receptacle.

12. Center the new bag directly over the stoma.



13. Firmly press the bag to the skin barrier so there are no wrinkles and no leaks.

If indicated, open the bag to allow in a small amount of air, then seal the drain. If a belt is used to fasten bag, attach to bag.

14. Remove gloves and wash hands.

15. Document in log that the procedure was done.

Report to parent any change in stool pattern.

Possible Problems

Observations	*Reason/Action*
Odor	*A properly cared for colostomy should not have a persistent odor. If there is an odor, check for a leak in the bag or for a poor seal.*
Leakage	*Check to see if bag is too full, or if it has a leak. Other causes include inadequate or improper stoma care; improper bag size for stoma; or a change in stool pattern (diarrhea).*
Bleeding from Stoma	*The stoma is very easily irritated. This may happen if it is rubbed too hard during cleaning, or if nicked with a fingernail. Usually the bleeding stops quickly. If it doesn't, apply gentle pressure and notify the parent. If a large area of the stoma appears to be bleeding, notify the parent or the doctor.*
Irritation Skin Breakdown around Stoma	*Usually this is due to improper stoma care, such as poor seal of the bag or inadequate barrier on the skin. If the skin is just red, make sure that skin barrier is properly applied. Also, check that the student is not using any new barrier or adhesive preparation (possible allergic reaction).*
Skin Is Raw or Weeping	*Contact the parent or doctor.*
A Rash with Small Red Spots	*There may be a yeast infection. Clean and dry the skin carefully and notify the parent.*
Change in Stool Pattern	*If the student is having either looser stools than before, or much fewer, notify the parent. This may be due to diet changes or illness.*

General Information Sheet

Children with Colostomies

Dear (Teacher, lunch aide, bus driver, etc.):

_____ (Student) has a condition that requires a colostomy. This is an opening on the surface of the abdomen into the large intestine, which allows the body to eliminate stool because the child is unable to do so. The opening, or stoma, is covered by a plastic pouch which serves as a container for waste until it can be emptied. The child or another person empties the pouch and cleans the stoma when needed in the bathroom.

Unless the student has a condition that otherwise interferes with his or her participation in physical education or other activities, there is no reason that he or she cannot participate fully. It is very difficult for a stoma to be injured. It can be bumped, leaned on, or slept on without problems. The pouch is firmly attached and should not come off under normal circumstances. The student should be allowed easy access to private bathroom facilities.

If the student has any problems with his/her colostomy, contact:

_____

_____

_____

These staff members have been trained to deal with any problems that may arise with this student.

For more information about colostomies or the student's needs, consult the school nurse or the parent.

Ileostomy

Purpose

An ileostomy is a surgical opening in the small intestine which is used to drain feces if the colon has been removed, or is unable to be used due to disease or injury. The end of the ileum is brought out to the surface of the abdomen and is stitched in place after it has been folded back onto itself.

The stoma may seem to protrude like a nipple, unlike the flatter stoma in a colostomy. This is because the fecal matter from ileostomies is very irritating to the surrounding skin, and the nipple helps to direct the drainage into the ostomy bag. Because food is not completely digested without the colon, discharge from the ileostomy stoma is usually pasty, but may be watery. Discharge will be fairly constant, with more after meals and a little less during the night. Foods that are difficult to digest, such as tomato skins or corn, will be passed from the ileostomy looking very much the same as when eaten. Students with ileostomies must be careful about what they eat so the ileostomy does not become blocked.

Another type of ileostomy, now used in some children, is the **continent ileostomy.** In this type of ileostomy, the surgeon makes an internal pouch from the end of the ileum under the skin. A valve is also made from the end of the intestine, which keeps most gas and the stool inside the pouch until it is emptied. The internal pouch is emptied four to six times a day by putting a catheter into the valve and draining the contents. Children with a continent ileostomy will still have a stoma, but their stoma care is usually simpler than with the other type of ileostomy.

Stoma Care

The goal is to keep the skin and stoma clean and healthy. Good skin care is essential, as discharge from the ostomy can be irritating to the skin around the stoma. A properly fitting barrier should be applied around the stoma to protect the skin from any leakage.

Ileostomy

Suggested Settings

The child or care-giver empties the pouch in a private place, such as a bathroom or the health office and does stoma care when needed. The bag should be emptied before it is full or if a leak occurs. Some students may want to have an extra change of clothes at school. The student should be able to participate in all school activities, including physical education.

Suggested Personnel and Training

Stoma care can be done by the student, school nurse or other adult with proven competency-based training in appropriate techniques and problem management. School personnel who have contact with a student with an ileostomy should receive general training, which covers the child's special health care needs and potential problems, as well as how to obtain assistance if problems occur.

The basic skills checklist included at the end of the manual can be used as a foundation for competency-based training in appropriate techniques. It outlines specific procedures step-by-step. Once the procedures have been mastered, the completed checklist serves as documentation of training.

The Health Care Plan: Issues for Special Consideration

Each student's Health Care Plan should be tailored to individual needs. The following section covers the procedure for ileostomy care, as well as possible problems that might arise. It is essential that these guidelines be reviewed before writing the Health Care Plan.

A sample Health Care Plan is included in the Useful Documents section of this manual. It may be copied and used to develop a plan for each student. For a student with an ileostomy, the following items should receive particular attention:

- The student should have ready access to the necessary equipment and a private bathroom with a sink.
- The student should be encouraged to learn to perform his or her ostomy care independently depending on ability.
- Some children with ileostomies may require a modified diet.
- The student's baseline status (stool consistency, volume, etc.).

Procedure for Changing an Ileostomy Bag

Procedure	*Points to Remember*
1. Explain procedure according to child's level of understanding.	*By encouraging the child to assist in the procedure the care-giver is helping the child to achieve maximum self-care skills.*
2. Assemble equipment:	

- Mild soap and water
- Soft cloth or gauze
- Skin preparation
- Adhesive
- Scissors, if specified
- Clean bag and belt, if needed
- Clean gloves (if bag is to be changed by someone other than student)
- Tape, if needed
- Catheter, if continent ileostomy

Each student should have a complete set-up at school with a spare bag.

3. Wash hands and put on gloves.

Not necessary if student is doing procedure unassisted.

4. Empty contents of used bag into toilet.

5. Carefully remove the used bag and skin barrier by pushing the skin away from the bag, instead of pulling the bag off the skin.

If a skin barrier is used that requires fitting, measure stoma.

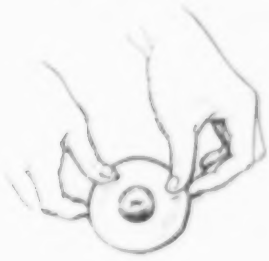
6. Wash the stoma using clean cloth or gauze. Cover the stoma with gauze or cloth and clean the skin around the stoma.

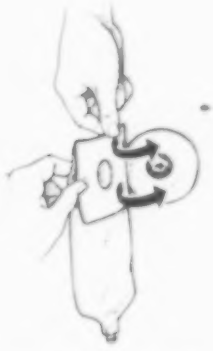
DO NOT SCRUB THE STOMA OR THE SKIN.

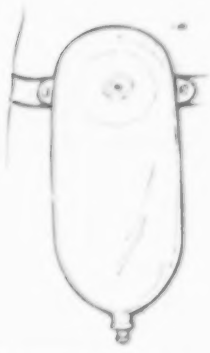
7. Inspect the skin for redness, rash or blistering.

If there is skin irritation, check child-specific guidelines. Do not put medication, ointment or adhesive on the damaged skin. Report skin irritation to school nurse and or parent.

8. Pat skin dry.
9. Place skin barrier on skin around stoma.
10. Peel off backing from adhesive, or apply adhesive to bag if necessary.
11. Remove gauze.
12. Center the new bag directly over the stoma.







13. Firmly press the bag to the skin barrier so there are no leaks or wrinkles.

If indicated, open the bag to allow in a small amount of air, then seal drain.

14. Remove gloves and wash hands.
15. Document in log that procedure was completed.

Report to the parent any change in stool pattern.

Possible Problems

Observations	*Reason/Action*
Odor	*A properly cared for ileostomy should not have a persistent odor. If there is an odor, check for an improperly cleaned bag or belt, or a leak around the stoma or in the bag itself.*
Leakage	*Check to see if bag is too full or has a leak. Other causes include inadequate or improper care, wrong bag size for stoma or change in amount of fecal drainage.*
Bleeding from Stoma	*The stoma is very easily irritated. This may happen if it is rubbed too hard during cleaning, or if nicked with a fingernail. Usually the bleeding stops quickly. If it doesn't, apply gentle pressure and notify the parent. If a large area of the stoma appears to be bleeding, notify the parent or the doctor.*
Irritation/Skin Breakdown around Stoma	*Usually this is due to improper stoma care or to an inadequate barrier on the skin. Fecal discharge from ileostomies is very irritating to the skin due to the presence of digestive juices in the fluid. Therefore, it is very important to have a proper seal and skin barrier. Also, check that the student is not using any new preparation that might be causing an allergic reaction.*
Skin Is Raw or Weeping	*Contact the parent or doctor.*
Rash with Small Red Dots	*This may be a yeast infection. Clean and dry the skin carefully and notify the parent.*
Change in Stool Pattern	*If the student either has more watery stools than usual or has not had any discharge from the ileostomy, notify the parent. This may be due to diet changes or illness.*

General Information Sheet

Children with Ileostomies

Dear (Teacher, lunch aide, bus driver, etc.):

_____ (Student) has a condition that requires an ileostomy. This is an opening on the surface of the abdomen into the small intestine, which allows the body to eliminate stool because the child is unable to do so. The opening, or stoma, is covered by a plastic pouch which serves as a container for waste until it can be emptied. The child or another person empties the pouch and cleans the stoma, when needed, in the bathroom.

Unless the student has a condition that otherwise would interfere with his or her participation in physical education or other activities, there is no reason that he or she cannot participate fully. It is very difficult for a stoma to be injured. It can be bumped, leaned on or slept on without problem. The pouch is firmly attached, and should not come off under normal circumstances. The student should be allowed easy access to private bathroom facilities.

If the student has any problems with his/her ileostomy, contact:

_____

_____

_____

These staff members have been trained to deal with any problems that may arise with this student.

For more information about ileostomies or the student's needs, consult the school or parent.

Urostomy

Urinary System—Structure and Function

The urinary system filters waste material from the blood and eliminates it from the body as urine.

Kidneys: Two bean-shaped organs, one at each side of the spine at the back of the upper abdomen, which regulate the amount of water and salt in the body. Ninety percent of water that the kidneys remove from the blood is recycled back into the blood, after filtering out waste.

Blood Vessels: Renal arteries carry blood from the main artery to the kidneys where waste is filtered out; the renal veins take cleansed blood away from the kidneys.

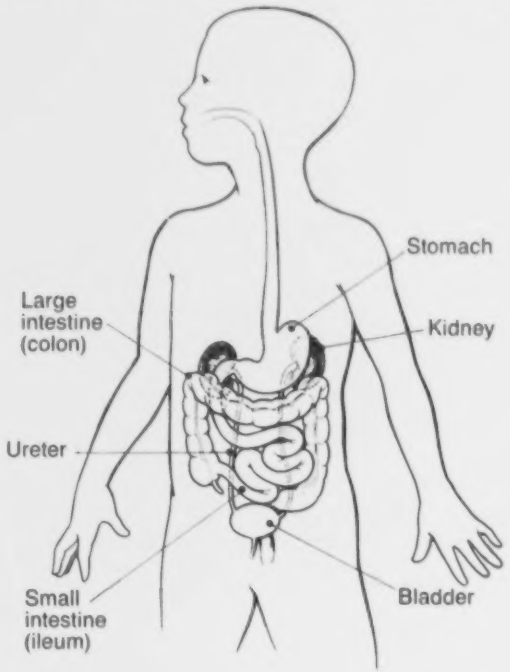
Ureters: Narrow tubes that carry the waste liquid (urine) from the kidneys to the bladder.

Bladder: Reservoir for storing the waste liquid (urine) until it is ready to be discharged from the body.

Urethra: Tube leading from the bladder to the outside opening of the body.

Meatus: The external opening.

- In boys, at the tip of the penis.
- In girls, between the labia, just above the vagina.

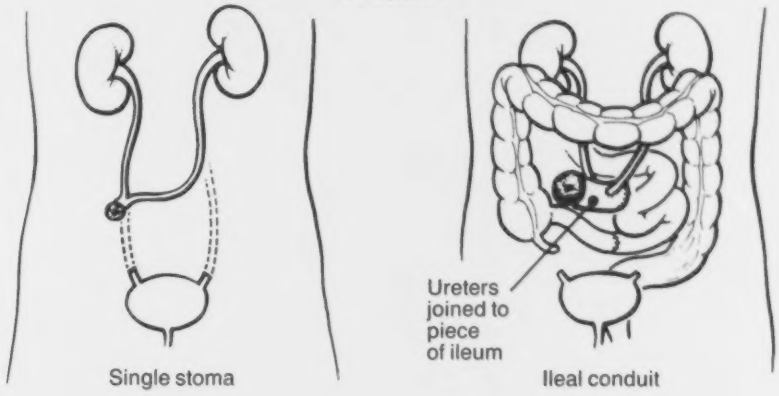


Purpose

A urostomy, or urinary diversion, is an artificial site for urine to come out of the body. A urostomy is made by a surgeon when the bladder has been removed or has been bypassed. Like other types of ostomies, the stoma for the urostomy is on the abdomen, and the urine drains into a bag or pouch.

There are two common kinds of urinary diversions. The first type is an **ileal conduit,** where the ureters are attached surgically to a piece of the small intestine, and then brought out to the surface of the abdomen to form a stoma. This looks like an ileostomy but stool does not drain out. The second type is a **ureterostomy,** where both or one of the ureters are brought directly out to the surface of the abdomen. Sometimes the stomas in ureterostomies will be pale pink, or look as if they are covered by skin. Because the bladder has been bypassed, the urostomies will continuously drain urine into the bag or pouch.

Urostomies



Single stoma

Ileal conduit

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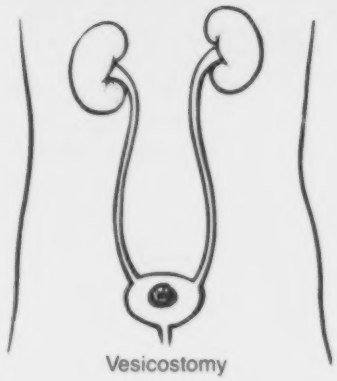
Some children will have a third type of urostomy, called a **vesicostomy.** This is an opening from the bladder directly to the surface of the skin. Some vesicostomies are called "continent," if the surgeon has made a pouch out of the bladder under the skin to hold the urine inside it until it is drained with a catheter. Continent vesicostomies also have a stoma. The more usual type of vesicostomy allows the urine to drain continuously into a bag or dressing covering the stoma. Most vesicostomies are used as temporary means of draining urine.



Vesicostomy

Stoma Care

The goal is to keep the skin and stoma clean and healthy. Good skin care is essential as discharge from the ostomy can be irritating to the skin around the stoma. A properly fitting barrier should be applied around the stoma to protect the skin from any leakage.

Suggested Settings

Stoma care should be done in a private place, such as a bathroom or the health office. The bag should be emptied before it is full or if a leak occurs. Some students may want to have an extra change of clothes at school. The student should be able to participate in all school activities, including physical education.

Suggested Personnel

Stoma care can be done by the student, school nurse or other adult with proven competency-based training in appropriate techniques and problem management. School personnel with regular contact with a student with a urostomy must receive general training, covering the child's special health care needs and potential problems, as well as how to obtain assistance if a problem occurs.

The basic skills checklist included at the end of this manual can be used as a foundation for competency-based training in appropriate techniques. It outlines specific procedures step-by-step. Once the procedures have been mastered, the completed checklist serves as documentation of training.

The Health Care Plan: Issues for Special Consideration

Each student's Health Care Plan should be tailored to individual needs. The following section covers the procedures for urostomy care, as well as potential problems that might arise. It is essential that these guidelines be reviewed before writing the Health Care Plan.

A sample Health Care Plan is included in the Useful Documents section of this manual. It may be copied and used to develop a plan for each student. For a student with a urostomy, the following items should receive particular attention:

- The student should have ready access to his or her equipment and private bathroom facilities with a sink.
- Depending on the student's ability, he or she should be encouraged to perform urostomy self-care independently.
- Urostomies should not have an odor. If present, an odor may indicate inadequate care or a leak
- The student may want to bring a change of clothing to school.
- The student's baseline status (urine volume and color, etc.)

Procedure to Change a Urostomy Bag

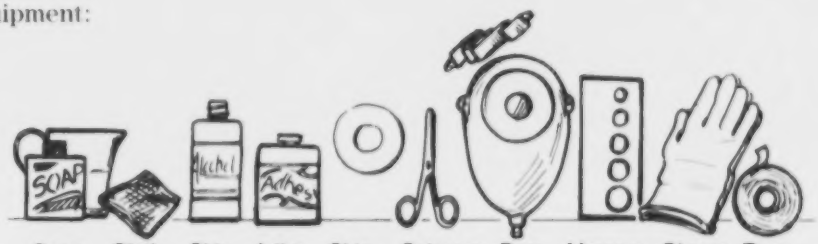
Procedure

1. Explain procedure at the child's level of understanding.

Points To Remember

By encouraging the child to assist in the procedure the care-giver is helping the child to achieve maximum self-care skills.

2. Assemble equipment:



- Mild soap and water
- Soft cloth or gauze
- Skin preparation
- Adhesive
- Scissors, if specified
- Clean bag and belt, if needed
- Container to clean and store used bag
- Disinfectant solution for cleaning bag
- Clean gloves (if bag is to be changed by someone other than the student)
- Tape, if needed
- Catheter, if a continent vesicostomy

Each child should have a complete set-up at school with a spare bag. For ureterostomies, the bag should have an anti-reflux valve to prevent urine from going back into the stoma.

3. Wash hands and apply gloves.
4. Empty contents of used bag into toilet.
5. Carefully remove the used bag and skin barrier by pushing the skin away from the bag, instead of pulling the bag off the skin.

If a skin barrier is used that requires fitting, measure stoma per child-specific guidelines.

6. Wash the stoma using clean cloth or gauze.

Cover the stoma with gauze or cloth and clean the skin around the stoma. ***DO NOT SCRUB THE STOMA OR THE SKIN.***

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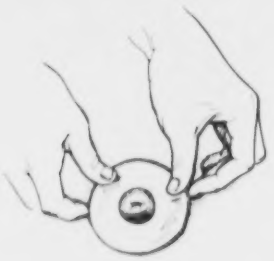
7. Inspect the skin for redness, rash or blistering.

If there is skin irritation check child-specific guidelines. Do not put medication, ointment or adhesive on the damaged skin. Report skin irritation to school nurse and/or parent.

8. Pat skin dry.

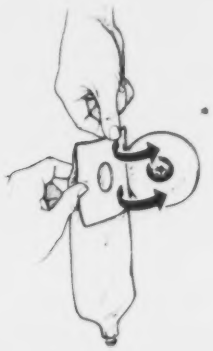
9. Place skin barrier on skin around stoma per child-specific guidelines.

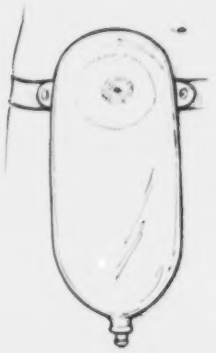


10. Apply adhesive to bag, or peel off backing if the adhesive is already on the bag.

11. Remove gauze first.

12. Center the new bag directly over the stoma.





13. Firmly press the bag to the skin barrier so there are no wrinkles or leaks.

If indicated, open the bag to allow in a small amount of air; then seal bottom, if the bag has a bottom drain.

14. Remove gloves and wash hands.

15. Document in log that procedure was completed.

Report to parent any change in urine pattern.

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Possible Problems

Observations	*Reason/Action*
Odor	*Fresh urine should not have an odor. If there is an odor, check for an improperly cleaned bag or belt, or a leak around the stoma or in the bag itself.* ***URINARY TRACT INFECTIONS MAY CAUSE THE URINE TO HAVE A STRONG SMELL.***
Leakage	*Check to see if the bag is too full or has a leak. Other causes include inadequate or improper stoma care (such as inadequate adhesive), or incorrect bag size for the stoma.*
Bleeding from stoma	*The stoma is very easily irritated. This may happen if it is rubbed too hard during cleaning or if nicked with a fingernail. Usually the bleeding stops quickly. If it doesn't, apply gentle pressure and notify the parent. If a large area of the stoma appears to be bleeding, notify the parent or the doctor.*
Irritation/skin breakdown around stoma	*Usually this is due to improper stoma care, or to inadequate barrier on the skin. Also, check that the student is not using any new preparation that might be causing an allergic reaction.*
Skin is raw or weeping	*Contact the parent or the doctor.*
A rash with small red dots	*This may be a yeast infection. Clean and dry the skin carefully and notify the parent.*
Decrease or change in the flow of urine	*This may occur if the ureterostomy has narrowed. Notify the parent of any change in urine flow.*

General Information Sheet

Children with Urostomies

Dear (Teacher, lunch aide, bus driver, etc.):

_____ (Student) has a condition that requires a urostomy. This is an opening on the surface of the abdomen, which allows the urine to come out of the body when the student is unable to pass urine in the usual way. Depending on the child's condition, the opening will be in different parts of the urinary system. The opening, or stoma, is covered by a plastic pouch which serves as a container for waste until it can be emptied. The child or another person empties the pouch and cleans the stoma, when needed, in the bathroom.

Unless the student has a condition that otherwise would interfere with his or her participation in physical education or other activities, there is no reason why he or she cannot participate fully. It is very difficult for a stoma to be injured. The pouch is firmly attached, and should not come off under normal circumstances. The student should be allowed easy access to private bathroom facilities.

If the student has any problems with his/her urostomy, contact:

_____

_____

_____

These staff members have been trained to deal with any problems that may arise with this student.

For more information about urostomies or the student's needs, consult the school nurse or the parent.

Disorders Affecting the Respiratory System

Many disorders and conditions can affect the respiratory system and cause the need for oxygen, suctioning, tracheostomy or ventilatory assistance.

Disorders of the nervous system that may affect the strength and effectiveness of respiratory movements:

- Brain damage from inadequate oxygen due to head trauma, drowning, suffocation or other accidents.
- Spinal cord injuries.
- Neuromuscular disorders such as polio and Lou Gehrig's disease.

Disorders of the muscles that may affect the strength and effectiveness of the respiratory movements:

- Injuries to the chest wall or the diaphragm.
- Conditions such as muscular dystrophy.

Problems of the upper airway that may affect passage of air to and from the lungs:

- Structural problems of the nasal/oral cavity, such as cleft palate or blockage of the nasal passages (choanal atresia).
- Disorders affecting the ability to swallow, such as muscular dystrophy, cerebral palsy, and burns of the airway.
- Blockages caused by tumors, swelling, and scarring that narrow the airway.

Problems of the lower airway that may affect passage of air or normal respiratory function:

- Swelling, scarring and other structural blockages in the trachea.
- Cystic fibrosis, which causes increased amounts of thick mucus in the lung and airway.
- Bronchopulmonary dysplasia, causing chronic oxygen dependency due to lung scarring.
- Asthma, which may also necessitate chronic oxygen use.

Oxygen Use

Purpose

Oxygen is used to provide oxygen needed for body functions, to relieve shortness of breath and to reduce the workload of the heart.

Oxygen use is indicated for physical conditions in which a child is unable to get enough oxygen into the body, or needs more oxygen, such as chronic lung conditions like bronchopulmonary dysplasia (BPD) or cystic fibrosis (CF), or heart problems.

Suggested Settings

Wherever the child is.

***** WARNING—THERE SHOULD BE NO SMOKING, OPEN FLAME OR HEAT SOURCE CLOSE TO THE OXYGEN; THIS MAY INCREASE THE RISK OF FIRE. EQUIPMENT AND OXYGEN SUPPLY MUST BE CHECKED AT LEAST DAILY, OR MORE OFTEN, DEPENDING ON THE EQUIPMENT.*****

Suggested Personnel and Training

Oxygen may be administered through a nasal cannula or a mask by the school nurse or other adult with proven competency-based training in appropriate techniques and problem management.

Use of tracheostomy collars requires a registered nurse or respiratory therapist with training, due to the care needs of the child with a tracheostomy.

Any school personnel with regular contact with a student who requires oxygen must receive general training, covering the child's special health care needs and potential problems, as well as how to implement the emergency plan.

The basic skills checklists included at the end of this manual can be used as a foundation for competency-based training in appropriate techniques. They outline specific procedures for oxygen use step-by-step. Once the procedures have been mastered, the completed checklists serve as documentation of training.

The Health Care Plan: Issues for Special Consideration

Each student's Health Care Plan must be tailored to individual needs. The following section covers the procedure for oxygen use and possible problems and emergencies that may arise. It is essential that this section be reviewed before writing the Health Care Plan.

A sample Health Care Plan is included in the Useful Documents section of this manual. It may be copied and used to develop a plan for each student. For a child who requires oxygen, the following items should receive particular attention:

- The student's underlying condition and possible problems associated with the condition or treatment.
- Oxygen safety precautions including posting of "Oxygen in use" warnings.
- Spare oxygen supply and safe storage when not in use.
- Adaptation of classroom for necessary equipment and storage (length of tubing, oxygen source).
- Signs and symptoms shown by the student when not receiving adequate oxygen (cyanosis, agitation or distress.)
- The student's baseline status, including color, respiratory rate, pulse and blood pressure.
- The child's ability to request oxygen or assistance.
- The percentage and/or litre flow of oxygen prescribed.

Respiratory System

Structure and Function

Breathing is the use of oxygen as a source of energy for the body, and the exchange of oxygen for carbon dioxide. The exchange of these gases takes place in the alveoli (tiny air sacs) of the lungs.

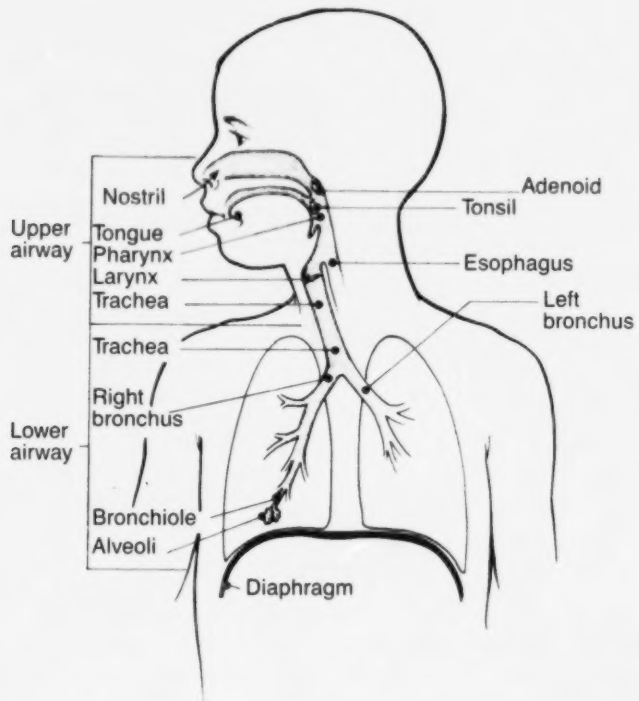
The respiratory system can be divided in two parts: the upper airway and the lower airway.

The Upper Airway: Air enters the body through the nose and mouth to reach the pharynx (back of the throat), before passing through the larynx (voice box) to the trachea (wind pipe).

As air enters the nose, larger dust particles are filtered out by the hairs in the nostrils. The air then passes through the nose, where a large area of moist mucus membrane adds moisture and warms the air to body temperature. When air reaches the back of the throat, bacteria and viruses are again filtered by the tonsils and adenoids.

Air then passes through the larynx and down into the trachea. This passage of air through the larynx during inhalation (breathing in) and exhalation (breathing out) is essential for normal speech production.

Mucus comes from the tissues that line both the upper and lower airway. When this fluid is not warmed and humidified in a natural way, the mucus can dry and partially or completely solidify, causing a blockage in the airway.



The Lower Airway: The trachea divides into the two main air tubes (the right bronchus and the left bronchus). Each bronchus subdivides into smaller bronchi that enter each lobe of the lungs. The bronchi then subdivide further into smaller ducts that enter each individual alveolus (air sac). It is here that the actual exchange of oxygen and carbon dioxide takes place.

The lungs occupy most of the chest cavity. They are elastic structures continuously filling and shrinking with each breath of air.

The main muscles of breathing are the diaphragm and the intercostal muscles, located between the ribs during normal breathing. The breathing (respiratory) rate in an adult is about 12–16 times a minute, in a baby about 24–36 times a minute, and 16–20 times a minute for a school-age child. In any person these rates will vary depending on exercise, excitement and illness.

Oxygen Safety Precautions

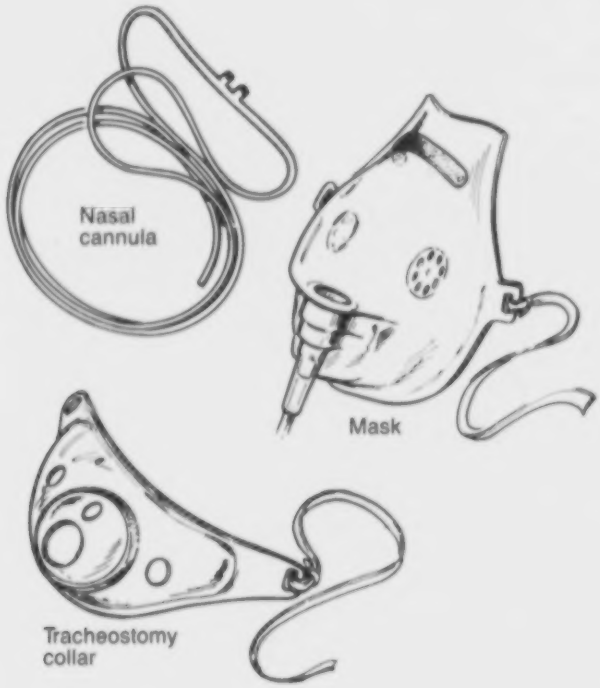
- Do not smoke or allow open flames, heaters, or radiators near oxygen.
- Never permit oil, grease or highly flammable material to come in contact with oxygen cylinders, liquid oxygen, valves, regulators or fittings. Do not lubricate with oil or other flammable substances, and do not handle equipment with greasy hands or rags.
- Never put anything over gas cylinder.
- Know who the home oxygen supply company contact person is; have number posted in an obvious place.
- Return any defective equipment to the authorized company for replacement.
- Have spare oxygen readily accessible, based on the student's needs. This should be stored safely in a secure place.
- Extra tubing and tank equipment (wrenches, etc.) must be kept in an easily accessible place.
- If using oxygen gas, be sure that the tank is securely placed in its stand and cannot fall or be knocked over.
- Be careful that the oxygen tubing does not become kinked, blocked or disconnected.
- Use only the flow meter setting prescribed by the child's doctor.
- The local fire department should be notified that oxygen is in use in the school.

Equipment

Oxygen sources:

- Oxygen gas in a cylinder (tank)
  The amount of oxygen available in the tank is indicated by the pressure gauge on the tank.
  - Tank stand
  - Regulator (pressure) valve
  - Wrench for valve
- Oxygen liquid in tank (thermos)
  The amount of oxygen available is indicated by the pressure gauge.
  - Tank carrier
- Oxygen concentrator (an electric machine that extracts oxygen from the room air) needs an electric outlet (usually not portable).

The oxygen is given to the child from the source by tubing which is connected to a mask, a nasal cannula, or a tracheostomy collar.



Nasal Cannula

A nasal cannula is used to deliver a low to moderate concentration of oxygen. It can be used as long as nasal passages are open; deviated septum, swelling of the passage, mucus, or polyps may interfere with adequate oxygen intake. It is easy to use. Eating, talking and coughing are possible.

Procedure	***Points to Remember***
1. Assemble equipment:	
• Cannula and tubing (plus extra connecting tubing)	*Extra connecting tubing may be used to increase mobility.*
• Oxygen source	
• Humidity source	
• Adaptor to connect tubing	
• Scissors	*Scissors are used to cut adaptor to size.*
2. Wash hands.	
3. Attach cannula tubing to oxygen source securely.	*Make sure a proper adaptor is available for the oxygen source. Check that tank has enough oxygen. Attach humidifier, if ordered. Check that all pieces are secured tightly to prevent leaks.*
4. Set liter flow on the flowmeter as prescribed by the doctor. **NEVER CHANGE THIS SETTING WITHOUT FIRST CONTACTING THE DOCTOR.**	*Too high an oxygen flow may irritate the nose. Over a long time, too high an oxygen concentration may injure the lungs. If you are concerned that the flow rate is inappropriate, contact the doctor.*
5. Check cannula prongs to make sure that air is coming out.	*Hold them up to your hand or cheek to feel for air coming up.*
6. Insert prongs into child's nose. **MAKE SURE BOTH PRONGS ARE IN THE NOSTRILS.**	*Gently insert prongs into the child's nostrils (one in each side). Loop the tubing over each ear and then under the chin; secure by sliding the clasp up under the chin. Make sure that it is comfortable for the child. If the child is not comfortable, the cannula tubing may be secured behind the head rather than under the chin.*

7. Wash hands.	
8. Document procedure and problems in log.	*Notify parent of any problems.*

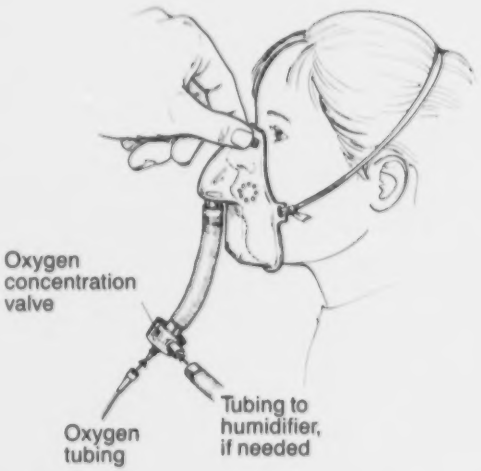
Oxygen Mask

An oxygen mask can be used for mouth or nose breathing. An advantage is that it can deliver higher or lower concentrations of oxygen than the nasal cannula, and is useful when nasal passages are blocked.

Procedure

1. Assemble equipment:
   - Appropriate size mask and tubing (plus a spare)
   - Extra connecting tubing plus adaptor
   - Appropriate oxygen concentration valve, if indicated for a mask
   - Oxygen source and back-up tank
   - Humidity source

Points to Remember



2. Wash hands.

3. Attach appropriate size mask with oxygen concentration selection valve (if indicated) to tubing and oxygen source.

   Certain types of masks have valves that deliver different concentrations of oxygen (venti-masks). Not all masks will have valves. Make sure that oxygen source has an adequate supply of oxygen. Attach humidity source, if prescribed.

4. Set oxygen flow on flowmeter to the rate prescribed by the doctor. **DO NOT CHANGE SETTING WITHOUT FIRST CONTACTING THE DOCTOR.**

   Too high a flow rate may cause irritation to the skin. In masks that use concentration valves, the concentration of oxygen delivered depends on the flow rate. (Marked on valve).

5. Set the prescribed oxygen concentration on mask valve, if present. **DO NOT CHANGE THIS SETTING WITHOUT FIRST CONTACTING THE DOCTOR.**

   Some masks have valves with different concentration settings; others have separate valves for each concentration. Make sure that appropriate flow rate is set as well as concentration on humidifier.

6. Check that oxygen flow is coming out of the mask.

   Hold mask up to your cheek to feel air flow. If no flow is felt, check oxygen supply, connections, flow rate and tubing for obstruction.

7. Place the mask over the child's nose and mouth.

   Tighten the elastic band over the child's head and pinch mask over the bridge of the nose for a good fit. Make sure that the child is comfortable with the mask.

8. Wash hands.

9. Document procedure and problems in log.

   Notify parent of any problems.

Tracheostomy Collar

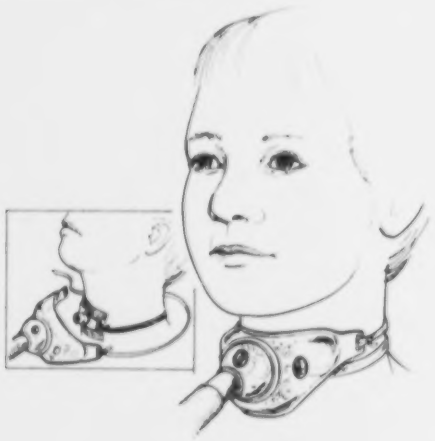
The collar is one means of delivering oxygen or humidified air to the tracheostomy. The tracheostomy collar may be used with a humidifying device and tubing:

- For a student who has thick, sticky secretions (mucus) which are difficult to cough up.
- When the air is dryer than what the student usually breathes, which may cause plugging of the trach due to increased stickiness of secretions.
- Oxygen is to be administered to the student at a specific oxygen flow rate or concentration.

Procedure

1. Wash hands.
2. Assemble equipment:
   - Extra nebulizer/humidifier
   - Heating device, if indicated
   - Wide bore tubing
   - Trach collar
   - Green tubing
   - Nipple adaptor

Points to Remember



3. Unwrap humidifier device; place cover on as described.

   There are several types of humidification devices. Check child-specific guidelines.
4. Dial percent of oxygen as ordered.

   Some children may only require compressed air.
5. Connect to compressed air/oxygen source.
6. Connect to heater if required.

   Some children may use cool mist.
7. Take wide bore tubing and place one end on the collar and the other on the humidifier or heater.
8. With compressed air/oxygen source on, look at mist at the end of tubing. You should see a fine mist when held up to the light.

   If this is not present, check that all connections are on securely and compressed air/oxygen is flowing. Turn on higher flow, then return to flow ordered to see if mist is present.
9. Place collar on child's neck over tracheostomy tube in the midline.
10. Wash hands.
11. Document procedure and problems in log.

    Notify parent of any problems.

Problems That Require Immediate Attention for Children Requiring Oxygen

Observations	*Reason/Action*
The child shows any of the following signs of respiratory distress:	*Check oxygen flow; if weak or inadequate flow:*
• Increased shortness of breath	*Check equipment*
• Agitation	*Make sure mouth and nose are not obstructed from food or mucus.*
• Blueness or pallor of the lips, nails or ear lobes	*Make sure tank is not empty or defective. If so, replace with back-up tank.*
• Pulling in of the muscles at the neck or chest	*Make sure trach collar is not out of position or obstructing the trach tube.*
• Confusion, dizziness or headache	*Make sure valve, regulator, and flowmeters are on proper settings.*
• Rapid or pounding pulse	*Make sure tubing is not blocked or kinked.*
	Check all connections from oxygen source to child.
	Make sure tubing, mask, cannula or collar are not blocked.
	Make sure humidifier bottle is properly attached.
The child remains in respiratory distress despite receiving adequate oxygen flow, has a respiratory arrest or becomes unconscious.	***INITIATE EMERGENCY PROCEDURE AND NOTIFY PARENTS. BEGIN CPR IF NEEDED.***

Other Potential Problems

Redness, dryness, or bleeding of the skin	*May be due to irritation from the device or from insufficient humidity.*
	Notify parent to discuss problem with doctor; a soothing cream or lotion may be required.
	NEVER USE POWDERS ON THE FACE.

General Information Sheet

Children Who Use Oxygen

Dear (Teacher, lunch aide, bus driver, etc.):

_____ (Student) has a condition that requires the use of additional oxygen. When used appropriately, this is a safe method that allows the child to be normally active. Oxygen is kept in a small tank or thermos and goes everywhere the child does. The oxygen is given to the child through a mask or small plastic tubing close to the child's nose. Children with tracheostomies receive oxygen through a collar which fits over the tube. Some children need oxygen continuously, while others may only need it intermittently.

Depending on the child's condition, she or he may be able to participate in many regular school activities with some modifications, which are determined by the school staff, the parents, doctor and school nurse. THERE SHOULD BE NO SMOKING OR OPEN FLAMES IN THE ROOM WHERE OXYGEN IS BEING USED. THE OXYGEN TANKS SHOULD NOT COME INTO CONTACT WITH OIL, GREASE, GREASY HANDS OR RAGS.

Specific emergency plans will be developed for _____ (Student). It is recommended that you participate in CPR training. It is also important to learn how to recognize the warning signs of breathing problems.

If the student has any problems with his/her breathing, contact

_____

_____

_____

These staff members have been trained to deal with any problems that may arise with this student.

For more information about oxygen use, or the student's needs, consult the school nurse or the parents.

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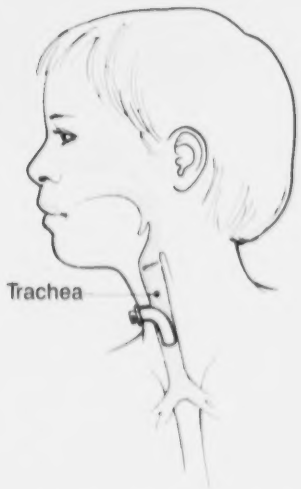
Tracheostomy

Purpose

A tracheostomy (trach) is a surgical opening into the trachea (windpipe) in the neck, which allows air to go in and out of the lungs. The opening in the neck is called a stoma. A metal or plastic tube, called a tracheostomy tube, may be inserted through the stoma into the trachea; other children may not need a trach tube. There are various types of tracheostomy tubes which are held in place with a tie around the neck.



Some children will have a tracheostomy because of an injury or condition that requires bypassing the normal breathing passages. Other children require a tracheostomy because of neurological, muscular, or other conditions that make it difficult for them to breathe effectively or to clear secretions or mucus out of their breathing passages without assistance. A tracheostomy allows long-term access to a ventilator or respirator (breathing machine), as well as an easy way to clear the windpipe of mucus. Many children with tracheostomies are able to speak. Most are able to eat and drink by mouth but may need dietary modifications.

Suggested Settings

Children with tracheostomies, in most cases, can attend a regular classroom. Some may need to be accompanied by a trained care-giver at all times while in the educational setting or during transport. Many children with trachs participate in regular school activities, with modifications that should be determined by the parents, doctor, school nurse and school staff. **All staff in contact with children with tracheostomies should have specialized CPR training. They should be able to recognize signs of breathing difficulty and should know how to activate the emergency plan for their setting.**

Children with trachs should avoid areas with a lot of dust or other airborne particles such as chalk dust. This is because the air the child breathes enters the lungs directly, without being filtered, humidified and warmed by the nose and mouth.

Regular tracheostomy care prescribed to maintain the child's health and function should be done at home. However, if additional regular care is required, it should be done in a private, clean area, such as the health room. In an emergency, care should be given wherever the child is. Therefore, it is imperative that a complete set of equipment for trach care, as well as a manual resuscitator and a spare trach tube be with the child at all times.

Suggested Personnel and Training

Tracheal care for children who require daily, in-school care such as suctioning, saline installation, use of a trach collar or other regular care should be provided by a registered nurse or respiratory therapist unless state medical and nursing practice standards specify otherwise. These care-givers should have proven, competency-based training in appropriate techniques and problem management.

We are aware of the different service delivery models available for tracheostomy care, which utilize non-medical personnel. Our recommendations are conservative and are based on the following issues:

- The lack of standardization in nursing and medical practice.
- The highly technical nature and potential risk to the child.

Under some circumstances, after a child with a trach has been in the school setting for a year or two and it is clear that the child's medical condition is stable or improving, it may be appropriate for the health care team and the parent to consider using a non-medical care-giver who has received appropriate training.

Some students need less frequent care or require no routine trach care at all. The decision regarding the placement of the care-giver for this student must be made by the parent, the student's physician and school nurse, based on the student's medical condition, tracheal care needs and adaptation to school. Other considerations should include the varied locations of the student in the school, and the school nurse:pupil ratio. A school nurse should be in the building at all times.

If the trained care-giver and back-up personnel are unable to be available on a given school day, the student should not attend school. However, an optional arrangement could be made between the school and the family where the parent would be available to attend school, to function as the care-giver for the child.

Any school personnel with regular contact with a student with a tracheostomy must receive general training that covers the child's special health care needs and potential problems as well as how to implement the established emergency plan.

The basic skills checklists included at the end of this manual can be used as a foundation for competency-based training in appropriate techniques and problem management. They outline specific procedures step-by-step. Once the procedures have been mastered, the completed checklists serve as a documentation of training.

The Health Care Plan: Issues for Special Consideration

Each student's Health Care Plan must be tailored to individual needs. The following sections cover the procedures for tracheostomy care and possible problems and emergencies that may arise. It is essential that these sections be reviewed before writing the Health Care Plan.

A sample Health Care Plan is included in the Useful Documents section of this manual. It may be copied and used to develop a plan for each student. For a student who requires tracheal care, the following items should receive particular attention:

- The student's underlying condition and possible problems associated with the condition or treatment.
- The student's baseline status (color, respiratory rate, pulse, blood pressure, secretions, etc.)
- The student's care requirements (suctioning, etc.).
- The student's ability to request assistance.
- Is this student prone to emergencies?
- Signs and symptoms of respiratory distress shown by this student.
- The type of tracheostomy tube used (inner cannula, cuffed).
- Accessibility to equipment and back-up equipment.
- An alternate means of warming and moisturizing the air may be necessary at times to prevent the mucus from becoming too thick.
- The child may not speak in a normal fashion; other means of communication may be necessary.
- Personnel and equipment needed for transportation (travel bag).
- Availability of care-givers.
- Staffing needs to provide care for the student (one-on-one, etc.)
- A means of communication between different areas of the school should be present. (Walkie-talkies, intercoms or telephones)

DO NOT USE powders, aerosols (like room deodorizers), small particles such as sand, glitter, lint, chalk dust, animal hair, small pieces of food, water, glue or chemicals with strong fumes near a child with a tracheostomy. Children who may have accidental contact with any of these potential hazards should have some kind of protective device covering the tracheostomy.

Required Equipment for Tracheostomy Care

- Spare tracheostomy tube with gauze pads and ties.
- Scissors.
- Suction machine.
- Equipment for suctioning (suction catheters).
- Sterile or clean gauze. Q-tips or swabs, if required.
- Saline dosettes if prescribed.
- Manual resuscitator with adaptor.
- Device to deliver humidity, if prescribed.
- Device to deliver oxygen, if prescribed.
- Device for protecting tracheostomy from dry or cold air, dust or other particles, such as an artificial nose.
- Sterile or clean gloves, per child-specific guidelines.

Points to Remember

THIS EQUIPMENT MUST ACCOMPANY THE CHILD AT ALL TIMES, including transport and classroom activities. A backpack or other carrying device could serve as a travel bag. This equipment should be checked daily.

It is encouraged that a manual resuscitator bag be obtained with adaptor if the child does not have one at home.

Refer to Universal Precautions, page 17.

Problems That Require Immediate Attention for Children with Tracheostomies

DO NOT LEAVE CHILD ALONE

Observations	*Reason/Action*
The child shows any of the following signs of respiratory distress:	
• coughing	*This may be due to a plugged trach tube from mucus or foreign matter.*
• color changes	*Reassure child.*
• wheezing	*If trach tube is blocked (suction catheter will not pass), change inner cannula if present, or replace entire trach tube.*
• agitation	*Give breaths with resuscitation bag.*
• retraction	*Give oxygen.*
• inability to move air through trach	*Initiate emergency plan and begin CPR if necessary.*
Aspiration of foreign material (food, sand, etc.) into tracheostomy	**DO NOT GIVE BREATH WITH RESUSCITATION BAG. This may force aspirate into lungs. SUCTION FIRST.**
	Respiratory distress or arrest can occur with any aspiration. Be prepared to initiate emergency plan. Begin CPR after suctioning, if needed.
	Bronchospasm (wheezing) may also occur. The child may require suctioning or medication.
Accidental extubation	*Reposition trach tube, if possible. If unable to reposition tube, insert new (spare) trach tube. Be prepared to initiate emergency procedure.*

Other Potential Problems

Observations	*Reason/Action*
Increased secretions, or thicker than usual mucus	*May require more frequent suctioning. These changes or yellow or green mucus may indicate infection. This should be documented in the daily log and the parent informed. Thicker mucus may also be a sign of insufficient humidity.*
Fever	*May be a sign of respiratory infection. NOTIFY PARENTS.*
Redness or crusting at the stoma	*May be due to a tracheal infection. The site should be thoroughly cleaned and the problem documented in the daily log and reported to the parent.*

General Information Sheet

Children with Tracheostomies

Dear (Teacher, lunch aide, bus driver, etc.):

_____ (Student) has a condition that requires a trach (tracheostomy). This is an opening in the neck into the windpipe, which allows the child to breathe if he or she is unable to breathe well through the nose or mouth. The opening, or stoma, may have a metal or a plastic tracheostomy tube inside to keep it open and to allow air to pass in and out of the windpipe and lungs. The tube is secured by ribbons which are tied around the child's neck. The student's trach tube may be covered with a device that provides humidity or oxygen. Some children have nothing covering the opening of the tube.

Most children with trachs are able to eat and drink by mouth. If the child cannot eat or drink, the child's doctor will give you specific instructions. Many children are able to speak normally. If the child's condition prevents him or her from speaking, other means of communication will be used. Not all children who have trachs require routine trach care in school. Many children can manage their care, but some who require regular trach care such as suctioning (a procedure to remove mucus from the trach tube) will have a trained care-giver with them.

Most children with trachs are able to participate in regular school activities. A team including the student's parents and educational and health personnel will help develop a specific health care plan. Classroom issues will be addressed in the care plan, such as the accommodation of health care during the school day with minimal interference, the avoidance of activities such as swimming, which could be harmful to the function of the trach, as well as avoidance of infectious exposure such as colds.

If the child has any problems with his/her tracheostomy, contact:

_____

_____

_____

These staff members have been trained to deal with any problems that may arise with this student.

Specific emergency plans will also be developed for _____ (Student). It is recommended that you participate in CPR training and request specialized training for persons with tracheostomies.

Tracheal Suctioning

Purpose

Tracheal suctioning is a means of clearing the airway of secretions or mucus. This is accomplished by using a vacuum-type device through the tracheostomy. Tracheal suctioning is performed when a child cannot adequately clear secretions on his or her own. Indications for suctioning include:

- Noisy, rattling breathing sounds.
- Secretions (mucus) visible and filling opening of tracheostomy.
- Signs of respiratory distress: difficulty breathing, agitation, paleness, excessive coughing, cyanosis (blueness), nasal flaring, retracting.
- No air moving through tracheostomy (listen for sounds).
- Before eating or drinking if congested.
- After respiratory treatments (inhalation therapy, assisted breathing with a self-inflating manual resuscitator), chest percussion and drainage.

Depending on the child's age, he or she may be able to request suctioning when needed or assist with the procedure.

Suggested Settings for Non-Emergency Situations

Designate a clean area for suctioning outside the classroom, if possible. Suctioning can be a noisy procedure and may be distracting and disruptive to the rest of the class.

If an electrically powered suction machine is used, the setting must have an accessible, working, grounded electric outlet.

Suggested Personnel and Training

Tracheal suctioning should be performed by a registered nurse or a respiratory therapist with proven competency-based training in appropriate techniques and problem management, unless state medical and nursing practice standards specify otherwise.

If the trained care-giver and back-up personnel are unable to be available on a given school day, the student should not attend school. However, an optional arrangement may be made between the school and the family, where the parent would be available to attend school to function as the care-giver for the child.

Any school personnel with regular contact with a student who requires tracheal suctioning must receive general training, covering the child's special health care needs and potential problems as well as how to implement the established emergency plan.

The basic skills checklist included at the end of this manual can be used as a foundation for competency-based training in appropriate techniques. It outlines procedures step-by-step. Once the procedures have been mastered, the completed checklist serves as documentation of training.

The Health Care Plan: Issues for Special Consideration

Each student's Health Care Plan must be tailored to individual needs. The following section covers the procedure for tracheal suctioning and possible problems and emergencies that may arise. It is essential that this section be reviewed before writing the Health Care Plan.

A sample Health Care Plan is included in the Useful Documents section of this manual. It may be copied and used to develop a plan for each student. For a student who requires tracheal suctioning, the following items should receive particular attention:

- The student's underlying condition and possible problems associated with the condition or treatment.
- The student's baseline status (color, respiratory rate, pulse, color and consistency of secretions, usual frequency or suctioning, usual indications for suctioning.)
- The child's ability to request suctioning.
- Back-up equipment (bulb syringe or DeLee catheter).
- Accessibility of equipment.
- Signs and symptoms of respiratory distress shown by the student (cyanosis, agitation, etc.)
- Need for saline installation.

Procedure for Tracheal Suctioning

Procedure	*Points to Remember*
*****ALL EQUIPMENT FOR SUCTIONING MUST BE ASSEMBLED AND READY FOR IMMEDIATE USE AT ALL TIMES AND CHECKED DAILY BY THE TRAINED CARE-GIVER. IF THE EQUIPMENT IS NOT PRESENT, OR IS NONFUNCTIONAL, THE CHILD SHOULD NOT ATTEND SCHOOL*****	
1. Wash hands.	
2. Assemble the equipment and materials on a small, clean work surface.	

• Suctioning device and manual back-up (DeLee)	*All children **must** have a means of suctioning (such as a portable suction machine or DeLee catheter) which can accompany them during all school activities as well as transport. A manual means of suctioning (such as a DeLee catheter) must be available as a back-up at all times as well, for those children who use suction machines.*
• Suction catheter of prescribed size	
• Saline to clear catheter	
• Container for saline	
• Disposable gloves or catheter and sleeve	
• Self-inflating manual resuscitation bag with trach adaptor	
• Saline dosettes (for instillation) if indicated	
• Plastic bag for disposal of materials	*Refer to Universal Precautions, page 17.*
3. Explain procedure at child's level of understanding.	*By encouraging the student to assist in the procedure, the care-giver is helping the student to achieve maximum self-care skills.*
4. Position child as recommended/ordered.	*When at school, most children are suctioned while seated upright.*
5. Encourage child to cough to expel secretions.	*May eliminate need for suctioning.*

6. Open suction catheter or kit.

Peel paper back without touching the inside of the package to maintain sterility.

7. Open saline dosette if instillation is ordered.

8. Fill container with saline.

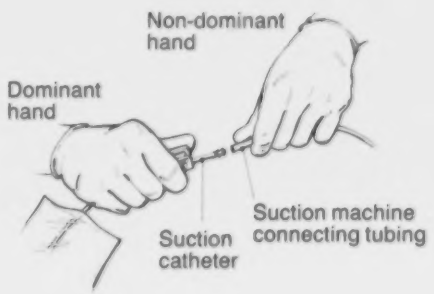
This will be used to moisten the catheter and to clear out secretions in the catheter.

9. Put gloves on hands.

The dominant hand should remain "clean." It should not touch anything but the catheter. The non-dominant hand should be used to turn on switches, touch other objects, etc.

10. Holding the end of the suction catheter in dominant hand, attach it to the suction machine tubing (held in other hand).

Leave the other end of catheter in its covering.



11. Turn machine on to appropriate vacuum setting for child.

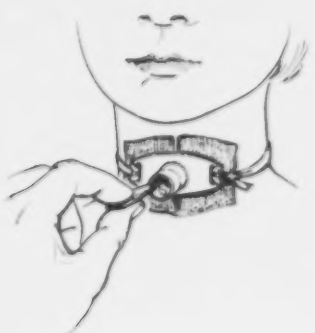
If machine has vacuum setting: this should be ordered by physician.

12. Encourage child to cough and to take a deep breath if possible. If prescribed, manually ventilate with resuscitator bag.

Coughing helps to bring secretions up toward the trach. By taking a deep breath (or manually ventilating), the child will get more oxygen into his/her lungs. This will also help to loosen secretions.

13. If prescribed, insert several drops of saline into trach with non-dominant hand. Manually ventilate with resuscitator bag to disperse saline, if ordered.

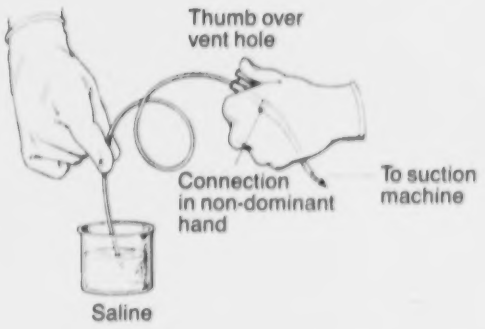
This helps to loosen and thin out thick or dry secretions.



14. Hold suction catheter 2–3 inches from tip with dominant hand and insert tip in saline.

This tests that suction is functioning and lubricates the catheter.

15. Grasp catheter connection with other hand; cover vent hole with thumb to suction a small amount of saline through catheter.



16. With thumb off vent hole, gently and quickly insert catheter into trach 1/2 cm beyond the distal end of the trach tube.

If the catheter is inserted too deeply, this can cause irritation/injury to the trachea, as well as bronchospasm. Coughing indicates that the suction catheter has passed the tracheostomy tube.

17. Cover vent hole with thumb while withdrawing catheter.

Rotate catheter gently between thumb and index finger while suctioning and withdrawing. This helps to reach all secretions in the trach tube.

*****EACH INSERTION AND WITHDRAWAL OF THE CATHETER MUST BE COMPLETED WITHIN 10 SECONDS. PROLONGED SUCTIONING BLOCKS THE CHILD'S AIRWAY AND CAN CAUSE A DANGEROUS DROP IN THE OXYGEN LEVEL.*****

18. Allow child to breathe or give breaths with resuscitator bag between suctioning passes. Suction saline again through catheter to rinse secretions from catheter and tubing.

The child needs to clear lungs of CO_2 and get new oxygen/air into lungs.

19. If moist, gurgling noises or whistling sounds are heard or if mucus is seen at the tracheostomy opening, repeat suctioning procedure (steps 15–17).

If appropriate, ask the child if he/she needs repeat suctioning.

20. Suction the nose and back of mouth if indicated.

21. For each suctioning session a new catheter should be used.

If the nose and mouth are suctioned, the catheter cannot be reused to suction the trach.

22. Remove gloves and wash hands. Discard used suction catheter in appropriate receptacle.

Refer to universal precautions on page 17.

23. Note color, consistency (thin, thick, etc.) and quantity of secretions.

Report any changes from child's usual pattern to parent.

24. Document procedure on child's log sheet.

25. Be sure suction equipment and supplies are re-stocked and checked daily, and are ready for immediate use.

Possible Problems of Suctioning

*****If Any Problems Occur, Do Not Leave Child Alone*****

Observations	*Reason/Action*
The child develops difficulty breathing during suctioning, or is not relieved by suctioning	*Reassure child.* *If trach tube is blocked (suction catheter will not pass), change inner cannula, if present, or replace entire trach tube.* *Give breaths with resuscitation bag.* *Give oxygen.* *Initiate emergency plan and begin CPR if necessary.*
The trach tube or inner cannula becomes dislodged	*Reposition using gentle pressure. If unable to reposition tube, insert new tube. Be prepared to initiate emergency plan.*
Bleeding occurs during suctioning:	
If secretions become blood-tinged and the child is not in respiratory distress	*Stop suctioning.* *Check vacuum pressure setting. Adjust to lower setting, if appropriate.*
If a large amount of blood is suctioned from the tracheostomy or the child develops respiratory distress while being suctioned	*Continue suctioning as necessary to clear the airway. Use the manual resuscitation bag and oxygen if needed.* *Initiate the emergency plan and begin CPR, if necessary.* *Reassure child.*
Bronchospasm occurs during suctioning	*May be due to excessive suctioning. Allow child to calm. If unable to remove catheter, disconnect from suction tubing and hold oxygen near end of suction catheter. When bronchospasm relaxes, remove catheter.*

Tracheostomy Tube Changes

Purpose

Tracheostomy tubes are routinely changed to prevent mucus from building up within the tubing, which may block the tube and prevent air from entering the lungs. A tube may need to be changed at any time if blocked, or replaced if accidentally dislodged.

Suggested Settings

Routine trach tube changes are performed in the home. This is ideally done when the child has an empty stomach, and when the airway is relatively free of mucus.

If a tracheostomy tube plugs or comes out, the tube should be changed or reinserted wherever the child is, even if conditions are not ideal.

Suggested Personnel and Training

Tracheal tube changes should be performed by a registered nurse or a respiratory therapist with proven competency-based training in appropriate techniques and problem management, unless state medical and nursing practice standards specify otherwise.

If the trained care-giver(s) and back-up personnel are unavailable on a given school day, the student should not attend school. However, an optional arrangement may be made between the school and the family, where the parent would be available to attend school to function as the care-giver for the child.

Any school personnel with regular contact with a student who requires a possible emergency tracheostomy tube change must receive general training, covering the child's special health care needs and potential problems as well as how to implement the established emergency plan.

The basic skills checklist included at the end of this manual can be used as a foundation for competency-based training in appropriate techniques. It outlines specific procedures step-by-step. Once the procedures have been mastered, the completed checklist serves as documentation of training.

The Health Care Plan: Issues for Special Consideration

Each student's Health Care Plan must be tailored to individual needs. The following section covers the procedure for trach tube changes as well as possible problems and emergencies that may arise. It is essential that this section be reviewed before writing the Health Care Plan.

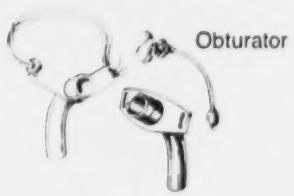
A sample Health Care Plan is included in the Useful Documents section of this manual. It may be copied and then used to develop a plan for each student. For a student who requires tracheostomy tube changes, the following items should receive particular attention:

- The student's underlying condition and possible problems associated with the condition or treatment (tracheal stenosis or laryngospasm, for example.)
- The student's baseline status (color, respiratory rate, pulse.)
- The type and size of trach tube (inner cannula, cuffed, etc.)
- Signs and symptoms of respiratory distress (cyanosis, agitation,etc.)
- The student's ability to request assistance.
- The student's ability to breathe without a trach tube.
- Does the child have difficulty with re-insertion of a dislodged trach tube?

Procedure to Change Trach Tube

Procedure	*Points to Remember*
1. Wash hands. Put on disposable gloves, if indicated.	*Should be done in a clean area with good lighting.* *Usually two people are needed. If an emergency situation occurs, trach tube change may be done by one person.*
2. Assemble equipment:	

• Prescribed type and size of tracheostomy tube for child	******ALWAYS HAVE A CLEAN TRACHEOSTOMY TUBE AVAILABLE AND READY FOR USE******
• Twill tape or other ties	
• Swivel connector or obturator	*The obturator is used as a guide for insertion.*
• Blunt scissors	
• Stethoscope	
• Resuscitation bag	
• Oxygen, if ordered	
• Suctioning device and supplies	
• Water soluble lubricant or sterile saline	*Never use vaseline or oil-based lubricants.*
• One size smaller tracheostomy tube	
• Blanket roll, if needed	*To position child's neck.*
3. Explain procedure to the child at his/her level of understanding.	*By encouraging the child to assist in the procedure the care-giver is helping the child to achieve maximum self-care skills.*
4. Open trach package.	*Keep tube clean.* ***DO NOT*** *touch curved part of tube.*
5. Put obturator into clean tracheostomy tube, or connect swivel to tube.	
6. Attach trach ties to tube.	*Some children may have a velcro holder or other means of securing trach tube around neck.*



7. Position the child as ordered.

For small children and infants, have them lie on their back with a blanket roll under the shoulders.

8. Suction trach and nose and mouth, if needed.

This makes airway as clear as possible.

9. Give 2–4 breaths with resuscitation bag, if indicated.

10. Have the assistant hold old tube in place while you cut the ties.

*If tube is being changed by one person—**DO NOT** cut ties until you have clean trach tube in your hand.*

11. When you have the new tube ready (in your hand), have assistant remove old tube.

12. If the tube does not have an obturator, insert the clean (new) tube at a right angle to the stoma, rotating it downward as it is inserted. If an obturator is present, insert tube straight into stoma.

13. If an obturator is used, immediately remove it after the tube is inserted. Insert inner cannula at this time.

Hold the trach tube in place at all times. A person is unable to breathe when the obturator is in place in the trach tube.

14. Listen and feel for air movement through trach tube.

15. While your assistant is holding the new tube in place, listen with stethoscope to assess breath sounds.

Observe the child for signs of distress, such as blueness, agitation, shortness of breath.

16. Secure tube in place with ties or holder.

The trach ties should be tied in a double knot. The ties should be loose enough to slip one finger between the ties and the neck.

17. Do skin care, if needed (see child-specific guidelines), and reapply gauze around and under the trach and ties.

A small amount of bleeding may occur around stoma or be in secretions after a trach change. If unusual or persistent bleeding is present, notify parent and seek medical attention.

18. Give 2–4 breaths with resuscitation bag and suction if indicated.

19. Discard used equipment according to universal precautions guidelines. (See page 17.)

20. Child may resume previous activities.

21. Remove gloves and wash hands.

22. Document procedure and problems in log.

23. Notify parent of any problems.

Potential Problems

Observations	*Reason/Action*
The trach tube comes out:	***NEVER LEAVE CHILD ALONE. CALL FOR ASSISTANCE.***
If the child is not showing signs of distress	*Follow procedure for trach tube change outlined above.*
If the child shows signs of respiratory distress	*Attempt to insert trach tube as outlined above.*
If tube can be inserted and the child is still having difficulty	• *Reassure the child.* • *Assess airway and breathing.* • *Administer oxygen via the trach.* • *Suction the trach.* • *Use bronchodilators, if ordered.* • *Use manual resuscitator bag, if indicated.* ***If distress persists, initiate emergency plan and begin CPR.***

Problems That Require Immediate Attention

Observations	*Reason/Action*
The tracheostomy tube cannot be reinserted	*This may be due to a false passage, or bronchospasm:* ***NEVER LEAVE CHILD ALONE. CALL FOR ASSISTANCE.*** • *Reassure the child.* • *Encourage the child to take a deep breath—* ***be prepared to insert tube if stoma opens.*** • *Administer flow of oxygen directly to the trach stoma.* • *Reposition the child.*
It is still impossible to insert the trach tube	• *Attempt to insert the smaller trach tube OR* • *Attempt to insert a suction catheter (at least 6 inches long, with vent end cut off) through stoma into trachea as a guide for trach tube (do not let go of catheter—it may be inhaled).* • *Slide trach tube over catheter into stoma and remove catheter without dislodging trach tube.*
IF INSERTION OF TRACH TUBE IS NOT POSSIBLE, AND THE CHILD HAS RESPIRATORY DISTRESS AND RESPIRATORY ARREST	***BEGIN CPR WITH MOUTH-TO-MOUTH BREATHS. COVER TRACH STOMA WITH YOUR THUMB IF AN AIR LEAK IS PRESENT. INITIATE THE EMERGENCY PLAN.***

Manual Resuscitation Bag

Purpose

A manual resuscitator or self-inflating bag is used to deliver breaths manually when a child is unable to breathe on his or her own. This device may be used with a mask to cover the nose and mouth or with a special adaptor for a tracheostomy tube.

Situations where a manual resuscitator may need to be used include:

- Child is having difficulty breathing on own.
- Ventilator malfunction.
- Routine respiratory care for a child.
- Child stops breathing and needs to be resuscitated.

Children who have tracheostomies or who use ventilators should have a manual resuscitation bag with them at all times.

Suggested Setting

In optimum circumstances manual resuscitation (ambuing or bagging) should be done in an area designated for health care procedures. In an emergency, it must be done wherever needed.

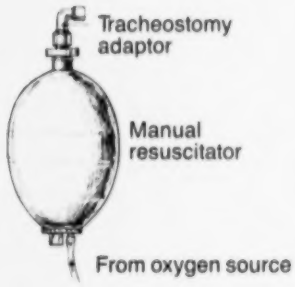
Suggested Personnel and Training

Manual resuscitation should be performed by a registered nurse or a respiratory therapist with proven competency-based training in appropriate techniques and problem management, unless state medical and nursing practice standards specify otherwise.

If the trained care-giver and back-up personnel are unavailable on a given school day, the student should not attend school. However, an optional agreement may be made between the school and the family where the parent would be available to attend school to function as the care-giver for the child.

Any school personnel who have regular contact with a student who may require the use of a manual resuscitator must receive general training, covering the child's special health care needs and potential problems, as well as how to implement the established emergency plan.

Procedure for Use of Manual Resuscitator with Tracheostomy

Procedure	*Points to Remember*
1. Wash hands.	
2. Assemble equipment: • Oxygen source with appropriate tubing if needed • Manual resuscitator • Adaptor for trach • Appropriate sized mask	
3. Explain the procedure to the child at his or her level of understanding.	
4. Check that resuscitator is functioning properly.	*Place adaptor that is connected to the bag against a gauze or tissue in your hand. Squeeze bag to be sure it is functioning. (If it is functioning you should feel slight resistance.)*
5. Position child.	*Position may vary, see child-specific guidelines. If oxygen is to be used, make sure tubing is attached and that oxygen is flowing.*
6. Attach resuscitator to tracheostomy tube.	*Hold trach with one hand to prevent accidental dislodgement while attaching adaptor to it.*
7. If the child is able to breathe independently, coordinate the manual breaths with his/her own breaths. Give a breath by squeezing the resuscitator bag as the student begins to inhale (chest begins to rise). ******IF YOU FEEL RESISTANCE AND/OR THE CHILD LOOKS DISTRESSED, BE SURE YOU ARE GIVING BREATHS WITH THE STUDENT'S OWN EFFORT AND THAT THE TUBE IS PATENT.******	
8. If the child is unable to breathe on his/her own, squeeze the resuscitator bag at a regular rate to deliver prescribed breaths per minute.	*If the child has no breathing rate prescribed, a standard range of breaths per minute is:* *20–24 for infants* *16–20 for children* *12–16 for adolescents and adults*
9. Wash hands.	
10. Document procedure and problems in log.	*Notify parent of any problems.*

Nose and Mouth Suctioning

Purpose

Nasal and/or oral suctioning are performed when the child needs assistance in clearing secretions from the airway. Indications of this include:

- Noisy, rattling or gurgling breathing sounds.
- Secretions (mucus or saliva) pooling in the back of the throat.
- Respiratory distress: difficulty breathing, agitation, paleness, excessive coughing or choking, cyanosis (blueness).

The student may request suctioning and may be able to assist with the procedure.

Suggested Settings

Routine, non-emergency suctioning can be done in a clean, private area outside of the classroom, such as the health office or in a corner of the classroom. Suctioning can be a noisy procedure and may be distracting and disruptive to the rest of the class.

If a suction machine is used that requires electricity, the setting must have an accessible electric outlet. All children who require routine suctioning must have a portable suction machine and suctioning equipment to accompany them in transport.

Suggested Personnel and Training

Nose and mouth suctioning should be performed by a care-giver with proven competency-based training in appropriate techniques and problem management. All school personnel who have regular contact with a student who requires nose and mouth suctioning must receive general training, covering the child's special health care needs and potential problems, as well as how to implement the established emergency plan.

The basic skills checklist included at the end of this manual can be used as a foundation for competency-based training in appropriate techniques. It outlines specific procedures step-by-step. Once the procedures have been mastered, the completed checklist serves as documentation of training.

Health Care Plan: Issues For Special Consideration

Each student's Health Care Plan must be tailored to individual needs. The following section covers the procedures for nose and mouth suctioning, as well as possible problems and emergencies that may arise. It is essential that this entire section be reviewed before writing the Health Care Plan.

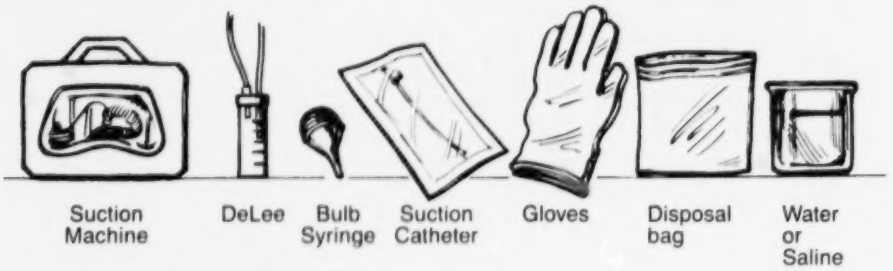
A sample Health Care Plan is included in the Useful Documents section of this manual. It may be copied and used to develop a plan for each student. For a student who needs nose and mouth suctioning, the following items should receive particular attention:

- The child's underlying condition and the possible complications arising from the condition or treatment.
- The child's baseline status (color, respiratory rate, pulse, usual amount of secretions and frequency of suctioning).
- Signs and symptoms of respiratory distress (agitation, cyanosis, noisy breathing, etc.).
- The ability of the child to request assistance.
- Usual indications for suctioning.

Procedure for Mouth and Nose Suctioning Using Suctioning Machine

Procedure

1. Assemble the equipment and materials on a small, clean work surface:
   - Suction machine (battery operated or plug-in) and tubing



   - Bulb syringe or other manual back-up
   - Suction catheter of the appropriate size
   - Clean gloves
   - Plastic bag for disposal of materials
   - Water or saline to clean catheter, with container.
2. Wash hands (unless in an emergency).
3. Explain the procedure to the child, according to his or her level of understanding. If able, the child should assist.
4. Position child.
5. Encourage the child to cough to expel secretions.
6. Open suction catheter or kit, without touching the inside of package.
7. Fill container with saline or water.
8. Put on gloves.
9. In the dominant hand hold the catheter and attach appropriate end to the suction machine. Keep the other end of the catheter in the package.
10. Turn machine on with other hand to prescribed suction pressure.

Points to Remember

******ALL EQUIPMENT FOR SUCTIONING MUST BE ASSEMBLED AND READY FOR IMMEDIATE USE AT ALL TIMES. IT MUST BE CHECKED DAILY BY DESIGNATED PERSONNEL******

By encouraging the child to assist in the procedure, the care-giver is helping the child to achieve maximum self-care skills.

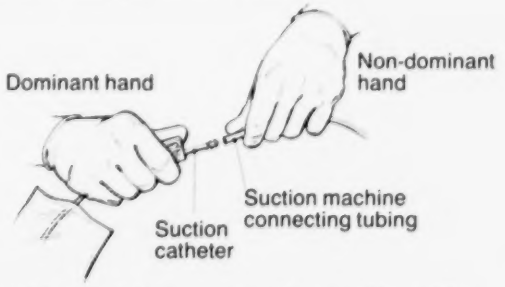
Position may vary and should be recommended in child-specific guidelines.

This may eliminate the need for suctioning.

This keeps catheter clean and reduces risk of transmitting infection.

This cleans and lubricates the catheter.

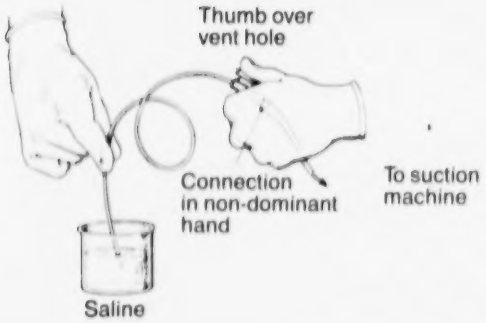
Dominant hand, which is used to manipulate catheter, should remain clean.



Portable machines may not have adjustable pressure settings.

11. Hold suction catheter 2–3 inches from the tip with dominant hand.

12. Grasp catheter connection with other hand; cover vent hole with thumb to suction a small amount of water through the catheter.



13. Remove covering from end of suction catheter with non clean hand while holding catheter in clean hand.

This tests that the suction machine is working and lubricates the catheter.

14. With thumb off vent hole, insert catheter gently into the nose to the prescribed depth suggested in child-specific guidelines.

Always suction the nose first. There are more bacteria in the mouth. Many children may only need to have the anterior part of the nose suctioned. Be gentle; the nose bleeds easily. Make sure catheter tip has been lubricated with saline or water-soluble lubricant.

If the nose secretions are too thick, put a few drops of saline in each nostril.

15. Cover vent hole with non-dominant thumb while suctioning and withdrawing catheter. Gently rotate catheter between thumb and index finger while suctioning and withdrawing.

Rotating the suction catheter diminishes damage to the mucus membrane. If the catheter sticks, remove thumb from vent hole to release suction.

16. Suction up some water to rinse secretions out of catheter.

17. If nasal congestion persists, repeat nasal suction.

18. With thumb off vent hole, insert catheter gently into the mouth.

Parts of the mouth to be suctioned include the back of the throat, the cheeks and under the tongue. Be careful when suctioning the back of the throat, as this may cause the child to gag and vomit.

19. Cover vent hole with non dominant thumb. Gently rotate catheter between thumb and index finger while suctioning and withdrawing.

This helps to minimize trauma to the membranes of the mouth.

20. Suction up some water to rinse secretions out of catheter.

21. If gurgling noises persist, repeat mouth suctioning procedure with the same catheter.

If after suctioning the mouth, repeat suctioning of the nose is needed, use a clean catheter.

22. Discard gloves and catheter in an appropriate receptacle.

23. Wash hands.

24. Note color, consistency and amount of secretions in daily procedure log.

Report to parent any changes from the child's usual pattern.

Procedure for Nose and Mouth Suctioning with a Bulb Syringe

Procedure	*Points to Remember*
1. Assemble equipment: • Bulb syringe • Saline • Tissues	
2. Wash hands.	
3. Explain the procedure to the child, according to his or her level of understanding.	*Always suction nose first.*
4. Position child.	*Position varies. See child-specific guidelines.*
5. Squeeze the bulb syringe away from student and place the tip gently into the nose or mouth (where secretions are visible or audible) and let the bulb fill up.	*When suctioning the mouth, suction under the tongue, in the cheeks and the back of the throat. Be careful when suctioning the back of the throat, as this may cause the child to gag and vomit.*
6. Remove the bulb syringe from the nose or mouth.	
7. Holding the bulb syringe over a tissue, squeeze the bulb to push out the secretions, then let it fill with air.	
8. Repeat steps 5–7 as needed until nose and mouth are clear.	
9. If the nose secretions are too thick, put a few drops of saline in each nostril before suctioning with bulb syringe.	
10. Clean bulb syringe in hot soapy water, rinse with fresh water, let dry and store.	
11. Dispose of tissues in appropriate receptacle.	
12. Wash hands.	
13. Note color, consistency and amount of secretions in daily procedure log.	*Report to parent any changes from the child's usual pattern.*

Procedure for Nose and Mouth Suctioning with a DeLee Catheter

Procedure	*Points to Remember*
1. Assemble equipment: • DeLee catheter • Saline	
2. Wash hands.	
3. Explain procedure to the child, according to his or her level of understanding.	
4. Position child.	*Position may vary. See child-specific guidelines.*
5. Insert the tip of the DeLee catheter into the nose or mouth.	*Suction nose first.*
6. Place the adapter in your mouth and suck on it to pull secretions up into tubing.	*The secretions will collect in the trap and not go into your mouth. Watch the trap. If the level of the secretions is getting too high (close to the adaptor tubing), stop suctioning and empty trap, or use another catheter.*
7. If the nose secretions are very thick, use a few drops of saline to loosen them before suctioning.	
8. Clean the DeLee catheter and trap in hot soapy water, or dispose in appropriate receptacle.	
9. Wash hands.	
10. Note the color, consistency and amount of secretions in daily procedure log.	*Report to parent any changes from the child's usual pattern.*

Possible Problems

Observations	*Reason/Action*
The child develops a nosebleed during suctioning	*Stop suctioning.* *Gently squeeze bridge of nose with your fingers and hold for 5 minutes. If bleeding has stopped, do not use that side of the nose to suction until permission is given by parent or doctor.*
The child gags or vomits during suctioning	*Catheter is probably down too far. Pull back a short distance and complete suctioning.* *If vomiting occurs, stop suctioning, remove catheter, and wait until vomiting has stopped. Make sure that the child is able to breathe easily.* *After vomiting, the child may require repeat suctioning. Be careful that catheter is not down too far.*

Use of Mechanical Ventilators

Ventilator dependency may result from a great variety of medical conditions in children. The type of ventilator equipment required, the degree of dependency, and the intensity of care required on a daily basis is determined by the individual student's medical needs.

This section provides a general overview of basic ventilator terminology, appropriate personnel, and possible problems and emergency management. It is not intended to be used as a comprehensive reference for ventilator management for an individual student. Several such manuals are available; see suggested references at the end of this section.

In addition, it is essential to obtain the child-specific information for a student from the appropriate medical providers.

Purpose

Mechanical ventilation is used to sustain life when a person is unable to breathe sufficiently on his or her own. Conditions such as neurologic damage, muscle weakness and severe pulmonary disease may result in ventilator dependency.

The ventilator or respirator is a machine that can be used to provide total respiratory support for a person who is unable to breathe independently. A ventilator may also be used to assist a child who is able to breathe but whose respiratory ability is inadequate. These children may require a few breaths a minute in addition to their own, positive pressure to keep the lungs open, or for a prescribed period of time during the day or night.

Many different types of ventilators are used, depending on the size of the child, medical condition, and the individual preference of the physician prescribing ventilation. The most common basic type of ventilator is a **positive pressure ventilator.** This kind of machine breathes for a person by delivering air into the lungs, usually through a tracheostomy tube. This type of ventilator can be relatively small and portable.

A **negative pressure ventilator** pulls air into the lungs by pulling the person's chest wall outward as the person lies in a vacuum chamber. There are a variety of negative pressure ventilators, including the iron lung, the "raincoat" and other portable home devices. This is much less commonly used and is only recommended for certain conditions such as muscular weakness. A tracheostomy tube is not required with negative pressure ventilators.

Suggested Settings

In most cases the ventilator must accompany the child in school and in the transportation vehicle. All settings should always have available grounded electrical outlets and a back-up power source.

A resuscitation bag, spare tracheostomy tube and suction supplies must also be available for all students with ventilators, at all times.

Suggested Personnel and Training

Ventilator care should be performed by a qualified registered nurse or respiratory therapist with proven competency-based training in appropriate techniques and problem management, unless state medical and nursing practice standards specify otherwise.

We are aware of different service delivery models available for ventilator care, which utilize non-medical personnel. Our recommendations are conservative and based on the following issues:

- The lack of standardization in nursing and medical practice.
- The highly technical nature and potential risk to the child.

A trained care-giver should be immediately available to the child who is dependent on mechanical ventilation—in the same classroom or transportation vehicle as the child. **They must understand the amount of assistance each child requires from the ventilator. All care-givers must know specialized CPR for tracheostomies.**

If the trained care-giver and back-up personnel are unavailable on a given school day, the student should not attend school. However, an optional agreement may be made between the school and the family where the parent would attend school to function as the care-giver for the child.

All school personnel who have regular contact with a student who requires mechanical ventilation must receive general training, covering the child's specific health care needs and potential problems, as well as how to implement the established emergency plan.

The Health Care Plan: Issues for Special Consideration

Each student's Health Care Plan must be tailored to individual needs. The following section reviews information about ventilator use and possible problems and emergencies that may arise. It is essential that this section and a reference for the specific ventilator used be reviewed before writing the Health Care Plan.

A sample Health Care Plan is included in the Useful Documents section of this manual. It may be copied and used to develop a plan for each student. For a student who requires the use of a ventilator, the following items should receive particular attention:

- The child's underlying condition and the possible problems arising from the condition or treatment.
- The student will need a highly skilled care-giver with him or her in the classroom and the transport vehicle.
- Ventilator settings need to be checked every one to two hours.
- Back-up power supply should be available at all times.
- The child's baseline status (usual ventilator settings, respiratory rate, color, lung sounds, pulse, etc.).
- The student's degree of ventilator dependency.
- The child's ability to request assistance.
- Signs and symptoms of respiratory distress (cyanosis, agitation, etc.).

Ventilator Features

Standard ventilator features that should be checked:

1. Power source:
   - Internal battery
   - External battery
   - Accessible, functioning electrical outlets
   - Emergency power supply
   - Back-up battery

2. Oxygen source:
   - Connection to ventilator and spare tubing

3. Humidifier:
   - cascade
   - heat/moisture exchanger

4. Ventilator circuit:

   Tubing and spare tubing required:
   - Vent to humidifier
   - Humidifier to child
   - Exhalation tubing
   - Pressure tubing

   Valves:
   - Exhalation valve
   - PEEP valve
   - Other adaptors needed for a particular child plus spares of each.

5. Alarms:
   - High and low pressure
   - Volume
   - Power source
   - Heat

6. Other Equipment That Should Be Checked Daily:
   - Manual resuscitator bag and adaptor or mask
   - Spare trach tube and supplies
   - Suctioning equipment

Points to Remember

******MUST BE CONNECTED FOR MACHINE TO FUNCTION.******

*An **oxygen source** may be included, if prescribed for student.*

Oxygen may be supplied in gas or liquid form.

Adequate supply of oxygen for day, spare tank and gauge.

Moisturizes the air going to the child.

*The ventilator **circuit** consists of the tubing that is attached to the ventilator and the child's tracheostomy tube, and such other components as the **humidifier** and the **exhalation and PEEP valves.** The tubing brings the air from the ventilator to the child.*

Ventilator circuit maintenance: Clean equipment daily or as needed.

ALARMS MUST BE TURNED ON AT ALL TIMES.

If a heated humidifier is used.

Ventilator Parameters	***Points to Remember***
These are prescribed settings for a given child, and should be checked several times during the day—every 1–2 hours or more frequently if the child's status changes.	
1. Tidal volume	*The amount of air in each breath. Determined by child's size.*
2. Respiratory rate	*Number of breaths delivered in a minute. Determined by child's condition and size.*
3. Oxygen %	*Based on individual child's needs.*
4. Peak Inspiratory Pressure (PIP)	*The amount of pressure required to inflate the lungs to the prescribed tidal volume.*
5. Positive End Expiratory Pressure (PEEP)	*The amount of pressure needed to keep the lungs from totally collapsing after exhalation.*
6. Ventilator Mode	*The type of respiratory support administered to the child: Intermittent Mandatory Ventilation (IMV), Assist-Control, or Spontaneous Intermittent Mandatory Ventilation (SIMV).* *The prescribed mode will be determined by the child's condition and respiratory ability.*
7. Inspiratory Time ("I" time)	*The amount of time in the vent cycle used to deliver a breath.*
8. High Pressure Alarm	*Reflects a too-high inspiratory pressure. May indicate increased resistance or obstruction.*
9. Low Pressure Alarm	*Indicates a too-low inspiratory pressure. Warns of a leak in the system; may signal that adequate volume is not being delivered.*
10. Power Source Alarm	*Indicates a change in power.* ***ALARMS SHOULD NEVER BE TURNED OFF.***

Possible Problems

Observations	*Reason/Action*
Child appears to be in distress: • Increased shortness of breath • Agitation • Blueness or pallor of lips, nailbeds • Retractions • Confusion • Rapid or pounding pulse.	*Immediately check the child and call for assistance. This may be due to occlusion of the trach tube by a plug or secretions, a dislodged tube or other airway problems.* *It may also be due to a ventilator malfunction:* • *The exhalation valve may be obstructed.* • *The trach tube may be out of alignment.* • *The child may be coughing, or doing something else to raise pressure transiently.* *Check to see that power source is functioning and that oxygen supply is adequate.* *Disconnect the child from the ventilator and use manual resuscitator bag if needed while attending to the child's needs.*
If the trach tube is dislodged	*Replace the tube.*
If the trach tube is plugged	*Attempt to suction—if unsuccessful, replace tube.*
If the child has increased secretions	*Suction the trach.*
If the child is wheezing	*Administer bronchodilators as ordered and suction as necessary.*
If the child continues to be in distress or becomes unconscious	*Continue using manual resuscitator and activate emergency procedure.*
If distress is relieved by disconnecting from ventilator and using manual resuscitation	*Check the ventilator while using the manual resuscitator, if necessary.* *Check circuit, valves and tubing for leaks or obstruction.* *If unable to locate and correct problem with ventilator, continue using resuscitation bag and call Home Care Co., parent and other providers as specified in child-specific guidelines. Activate emergency plan if needed.*
If the power supply is not functioning	*"Bag" with manual resuscitator until problem can be corrected.*

An alarm is sounding:	***ALWAYS CHECK CHILD FIRST; IF THE CHILD IS OKAY, CHECK THE VENTILATOR.***
• Low Pressure alarm is a **continuous alarm**	*The child may be disconnected from the vent.* *The exhalation valve is not working (wet or punctured).* *The trach tube is no longer in place.* *The circuit tubing is no longer attached or is loose.* *Water is present in pressure or exhalation tubing.* *Humidifier is improperly attached or leaking.*
• High Pressure alarm is an **intermittent alarm**	*This may indicate increased resistance or obstruction.* *The child may need to be suctioned for secretions or a mucus plug.* *The circuit tubing may be blocked by water or pinched off.* *The exhalation valve may be obstructed.* *The trach tube may be out of alignment.* *The child may be coughing, or doing something else to raise pressure transiently.*
• Power alarm is **continuous**	*Check to see that power source is functioning.* *The alarm may sound if power source is interrupted, e.g., power failure, battery change, etc.*

General Information Sheet

Children Who Use Mechanical Ventilators

Dear (Teacher, lunch aide, bus driver, etc.):

_____ (student) has a condition that requires a ventilator (breathing machine). This machine helps a person breathe by pushing air into the lungs. Children who use a ventilator usually have a tracheostomy tube—a tube that has been surgically placed into the windpipe in the neck. This tube is attached to the ventilator by soft plastic tubing. Ventilators need a battery or other power source to function. The ventilator must be with the student at all times, including during transportation.

A team including the child's parents, and education and health personnel will develop a specific health care plan for the school. Classroom issues such as the accommodation of health care during the day with minimal disruption of the class, feeding issues, and the avoidance of infectious exposure such as colds will be addressed in the care plan.

The student will have a care-giver with him/her at all times. This person will be trained to manage the ventilator and care for the child.

The following staff members have also been trained to deal with any problems that might arise:

_____

_____

_____

All staff who have contact with children who use ventilators should be familiar with the emergency plan and how to initiate it in their setting. It is recommended that you participate in CPR training, with specialized training for tracheostomies.

For more information about ventilators, tracheostomies or the student's needs, consult the school nurse or the child's parents.

Included in this section are Skills Checklists that can be used to review and document training of care-givers. At the end of this section is a form that can be used with each skills checklist by the instructor to summarize training and to recommend follow-up and review of skills.

The following procedures are included:

* Gastrostomy Bolus Feeding
* Gastrostomy Slow Drip/Continuous Feeding
* Gastrostomy Button Bolus Feeding
* Gastrostomy Button Slow Drip/Continuous Feeding
* Nasogastric Tube Bolus Feeding
* Nasogastric Tube Slow Drip/Continuous Feeding
* Central Venous Line Dressing Change
* Heparin Lock Flush
* Clean Intermittent Catheterization-Male
* Clean Intermittent Catheterization-Female
* Colostomy Care
* Ileostomy Care
* Urostomy Care
* Oxygen: Cylinder, Liquid, Concentrator
* Go Bag Supplies
* Tracheostomy Care
* Sterile Suctioning
* DeLee Suctioning
* Bulb Syringe
* Nasal/Oral Suctioning
* Respiratory Emergencies:
    - Accidental Removal of Trach Tube
    - Difficulty with Trach Tube Insertion
    - Blocked Tracheostomy Tube
    - Aspiration
* Summary of Skills Training and Recommendations

Gastrostomy Bolus Feeding
Skills Checklist

Child's Name:_____

Person Trained: _____

Position: _____ Instructor:_____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
A. States name and purpose of procedure.							
B. Preparation:							
1. Completes at _____ time(s)							
2. _____cc's (amount) _____Formula/Feeding (type of feeding)							
3. Feeding to be completed in _____ minutes							
4. Position for feeding _____							
5. Identifies potential problems and appropriate actions							
C. Identifies Supplies:							
1. Catheter ____ (size) ____ (type) Balloon size _____ cc							
a. Small port plug							
b. Feeding port							
2. Clamp and plug							
3. 60 cc. catheter-tipped syringe							
4. Formula at room temperature							
5. Small glass of tap water							
D. Procedure:							
1. Washes hands thoroughly							
2. Gathers equipment							
3. Positions child and explains procedure							
4. Removes plug from feeding tube							
Child-Specific: (Steps 5-11 need to be prescribed for each child)							
5. Checks for proper placement of tube: Attaches syringe and aspirates stomach contents by pulling plunger back							
6. Measures contents							
7. Returns stomach contents to stomach							
8. If stomach contents are over ____cc's, subtract from feeding							
9. If more than _____cc's, hold feeding							
10. Pinches or clamps off tube							

Gastrostomy Bolus Feeding
Skills Checklist

Child's Name: _____

	Demo	Return Demonstration					
	Date	Date	Date	Date	Date	Date	Date
11. Removes syringe							
12. Attaches syringe without plunger to feeding port							
13. Pours formula (room temperature) into syringe (approx. 30-40cc's)							
14. Releases or unclamps tube and allows feeding to go in slowly							
15. When feeding gets to 5cc marker, adds more formula							
16. Continues this procedure until the feeding has been completed							
17. Takes about 30 minutes to complete feeding (the higher the syringe is held the faster the feeding will flow)							
18. Lowers the syringe if feeding is going too fast							
19. Makes feeding like meal time: young children may suck on a pacifier							
20. Flushes tube with _____cc's of water when feeding is complete							
21. Pinches off tubing, removes syringe and closes off clamp							
22. Allows child to remain in feeding position for minimum of one-half hour after feeding							
23. Washes syringe with soap and warm water and puts in home container							
24. Reports any problems to parents							
25. Documents procedure and problems in log							

Checklist content approved by:

_____ _____

Parent/Guardian Signature Date

Format adapted with permission from:

Chronic Illness Program
Ventilator Assisted Care Program
Children's Hospital New Orleans, LA (Rvd. 6/89)

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Gastrostomy Feeding
Slow Drip/Continuous method
Skills Checklist

Child's Name:_____

Person Trained:_____

Position:_____ Instructor:_____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
A. States name and purpose of procedure.							
B. Preparation:							
1. Completes at _____ time(s)							
2. ____ cc's (amount) _____ Formula/Feeding							
3. Feeding to be completed in _____ minutes							
4. Position for feeding _____							
5. Identifies where procedure is done and child's activity level							
6. Identifies potential problems and appropriate actions							
C. Identifies Supplies:							
1. Gastrostomy tube ____ (size) ____ (type) Balloon size _____ cc							
a. Small port plug							
b. Feeding port							
2. Clamp and plug/cap							
3. Feeding solution (room temperature)							
4. 60 cc catheter-tipped syringe							
5. Feeding container and tubing							
6. Pump (if used)							
7. Tap water							
8. Pole to hold feeding container							
D. Procedure:							
1. Washes hands							
2. Assembles equipment							
3. Positions child							
4. Explains the procedure to child							
Child-Specific: (steps 5-10 need to be prescribed for each child)							
5. Checks for proper placement of tube: Attaches syringe and aspirates stomach contents by pulling plunger back							

Gastrostomy Feeding
Slow Drip/Continuous method
Skills Checklist

Child's Name: _____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
6. Measures contents							
7. Returns contents to stomach							
8. If volume is more than _____ cc's, subtract from feeding							
9. If more than _____ cc's, hold feeding							
10. Pinches or clamps off tubing and removes syringe							
11. Pours feeding/fluids into feeding container, runs feeding through tubing to the tip and clamps tubing							
12. Hangs container on pole at height required to deliver prescribed flow. If pump is used, places tubing into pump and sets flow rate							
13. Opens safety plug and inserts tubing into the button							
14. Opens clamp on tubing and adjusts flow to prescribed rate. (If pump is used, opens clamp completely)							
15. For **a continuous feeding** with a pump, adds more fluid to container when empty							
16. Checks rate and flow periodically and adjusts if needed							
17. When **single feeding** is completed (bag empty), clamps tubing and G-tube and disconnects from G-tube							
18. Makes feeding like meal time: young children may suck on a pacifier							
19. Attaches catheter-tipped syringe with plunger removed and flushes G-tube with _____ cc's water							
20. After flushing, lowers syringe below stomach level or leaves elevated and open for specified time to vent G-tube							
21. Clamps or caps G-tube and secures tubing							
22. Keeps the child in feeding position for at least 30 minutes after completing feeding							
23. Cleans and stores feeding container, tubing and syringe							
24. Washes hands							
25. Documents feeding and observations in log							
26. Reports any problems to parents							

Checklist content approved by:

_____ _____

Parent/Guardian Signature Date

Format adapted with permission from: Chronic Illness Program, Ventilator Assisted Care Program
Children's Hospital, New Orleans, LA

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Gastrostomy Button Bolus Feeding
Skills Checklist

Child's Name:_____

Person Trained:_____

Position:_____ Instructor:_____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
A. States name and purpose of procedure.							
B. Preparation:							
1. Completes at _____ time(s)							
2. _____cc's (Amount) _____Formula/feeding (type of feeding)							
3. Feeding to be completed in _____minutes							
4. Position for feeding _____							
5. Identifies potential problems and appropriate actions							
C. Identifies Supplies:							
1. 60 cc catheter-tip feeding syringe							
2. Adapter with tubing and clamp							
3. Prescribed diet at room temperature							
4. Tap water							
D. Procedure:							
1. Washes hands thoroughly							
2. Gathers equipment							
3. Positions child							
4. Attaches the adapter to feeding syringe							
5. Opens safety plug and attaches the adapter with feeding syringe to the button							
6. Pours feeding into syringe until about one-half full							
7. Elevates the feeding above the level of the stomach. Opens clamp. Allows feeding to go in slowly, 20-30 minutes. The higher the syringe is held, the faster the feeding will flow. Lowers syringe if the feeding is going too fast.							
8. Refills the syringe before it empties to prevent air from entering stomach							
9. Makes feeding like mealtime: young children may suck on a pacifier							
10. Flushes the button with _____ cc's of water when feeding is complete							

Gastrostomy Button Bolus Feeding
Skills Checklist

Child's Name:_____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
11. After flushing, lowers the syringe below the stomach level to facilitate burping							
12. Removes the adapter with feeding syringe and snaps safety plug in place							
13. Keeps the child in a feeding position for at least 30 minutes after completing feeding							
14. Washes syringe and tubing with soap and warm water and puts in home container							
15 Documents feeding and observations in log							
16. Reports any problems to parents							

Checklist content approved by:

_____ _____

Parent/Guardian Signature Date

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Ventilator Assisted Care Program
Children's Hospital, New Orleans, LA (Rvd. 6/89)

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Gastrostomy Feeding Button
Slow Drip/Continuous Method
Skills Checklist

Child's Name: _____

Person Trained: _____

Position: _____ Instructor: _____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
A. States name and purpose of procedure.							
B. Preparation:							
1. Completes at _____ time(s)							
2. ____ cc's (amount) ____ Formula/feeding solution							
3. Feeding to be completed in _____ minutes							
4. Position for feeding _____							
5. Identifies where procedure is done and child's activity level							
6. Identifies potential problems and appropriate actions.							
C. Identifies Supplies:							
1. GT button _____ (size).							
2. Adaptor with tubing and clamp							
3. Feeding solution in container (bag)-at room temperature							
4. 60 cc catheter-tipped syringe							
5. Pump (if used)							
6. Tap water							
7. Pole to hold feeding container							
D. Procedure:							
1. Washes hands							
2. Assembles equipment							
3. Positions child							
4. Explains the procedure to child							
5. Attaches adaptor to tubing							
6. Pours feeding/fluids into feeding container, runs feeding through tubing to the tip and clamps tubing							
7. Hangs container on pole at height required to deliver prescribed flow. If pump is used, places tubing into pump and sets flow rate							
8. Opens safety plug and inserts tubing into the button							

Gastrostomy Feeding Button
Slow Drip/Continuous Method
Skills Checklist

Child's Name: _____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
9. Opens clamp on tubing and adjusts flow to prescribed rate. (If pump is used, opens clamp completely)							
10. For a **continuous feeding** with a pump, adds more fluid to bag when empty							
11. Checks rate and flow periodically and adjusts if needed							
12. When **single feeding** is completed (bag empty), clamps feeding bag tubing and removes							
13. Makes feeding like meal time: Young children may suck on a pacifier							
14. Attaches catheter-tipped syringe and flushes adaptor tubing and button with ____cc's water							
15. After flushing, lowers syringe below stomach level to facilitate burping							
16. Removes adaptor and tubing from button and snaps safety plug in place							
17. Keeps child in feeding position for at least 30 minutes after completing feeding							
18. Cleans and stores feeding container and tubing							
19. Washes hands							
20. Documents feeding and observations in log							
21. Reports any problems to parents							

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Children's Hospital, New Orleans, LA

Nasogastric Tube Feeding
Bolus Method
Skills Checklist

Child's Name:_____

Person Trained: _____

Position: _____ Instructor:_____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
A. States name and purpose of procedure.							
B. Preparation:							
1. Completes at _____ time(s)							
2._____ cc's (amount) _____ Formula/feeding solution							
3. Feeding to be completed in _____ minutes							
4. Position for feeding _____							
5. Identifies where procedure is done and child's activity level							
6. Identifies potential problems and appropriate actions							
C. Identifies Supplies:							
1. NG tube____ (size) _____ (type)							
2. Stethoscope							
3. Feeding solution at room temperature							
4. 60 cc catheter-tipped syringe							
5. Tap water							
6. Cap and clamp for tubing							
D. Procedure:							
1. Washes hands							
2. Assembles equipment							
3. Positions child							
4. Explains the procedure to child							
5. Checks for proper NG placement: (Steps 5-10 need to be prescribed for each child)							
a. Connects syringe to NG tubing after removing cap/plug							
b. Places stethoscope over mid-left abdomen and gently pushes in 5-10cc of air with syringe							
c. Listens with stethoscope and identifies sounds heard with proper placement							
6. Aspirates stomach contents by pulling plunger back							

Nasogastric Tube Feeding
Bolus Method
Skills Checklist

Child's Name:_____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
7. Measures stomach contents and returns to stomach							
8. If volume is over ___ cc's, subtract from feeding							
9. If volume is more than ____ cc's, hold feeding							
10. Clamps/pinches NG tubing							
11. Attaches syringe without plunger to NG tube							
12. Pours 30-40 cc's feeding into syringe							
13. Opens clamp on NG tubing, allows feeding to run in slowly. (The higher the syringe is held, the faster the feeding will flow)							
14. Adds more formula when liquid is at 5cc mark. Continues to add until feeding is completed over prescribed time. (Lowers syringe if flow is too fast)							
15. Makes feeding like meal time: young children may suck on a pacifier							
16. Flushes NG tube with _____ cc's water							
17. Pinches or clamps NG tubing. Disconnects syringe							
18. Clamps and/or caps NG tube							
19. Makes sure NG tube is secured							
20. Keeps the child in feeding position for at least 30 minutes after completing feeding							
21. Cleans and stores syringe							
22. Documents feeding and observations in log							
23. Reports any problems to parents							

Checklist content approved by:

_____ _____

Parent/Guardian Signature Date

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Chronic Illness Program
Ventilator Assisted Care Program
Children's Hospital, New Orleans, LA

Nasogastric Tube Feeding
Slow Drip/Continuous Method
Skills Checklist

Child's Name: _____

Person Trained: _____

Position: _____ Instructor: _____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
A. States name and purpose of procedure.							
B. Preparation:							
1. Completes at _____ time(s)							
2. ____cc's (amount)							
____ Formula/feeding at room temperature							
3. Feeding to be completed in _____ minutes							
4. Position for feeding _____							
5. Identifies where procedure is done and child's activity level							
6. Identifies potential problems and appropriate actions							
C. Identifies Supplies:							
1. NG tube____ (size) ____ (type)							
2. Stethoscope							
3. Feeding solution in container (bag)							
4. 60 cc catheter-tipped syringe							
5. Pump (if used)							
6. Tap water							
7. Pole to hold feeding container							
D. Procedure:							
1. Washes hands							
2. Assembles equipment							
3. Positions child							
4. Explains the procedure to child							
5. Checks for proper NG placement: (Steps 5-10 need to be prescribed for each child)							
a. Connects syringe to NG tubing							
b. Places stethoscope over mid-left abdomen and gently pushes in 5-10cc of air with syringe							
c. Listens with stethoscope and identifies sounds heard with proper placement							
6. Aspirates stomach contents by pulling plunger back							

Nasogastric Tube Feeding
Slow Drip/Continuous Method
Skills Checklist

Child's Name: _____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
7. Measures volume of contents and returns to stomach							
8. If volume is over ___ cc's, subtract from feeding							
9. If volume is more than _____ cc's, hold feeding							
10. Clamps/pinches NG tubing							
11. Pours feeding into container, running fluid through tubing to tip and clamps tubing							
12. Hangs container on pole at height required to deliver prescribed flow rate. (If a pump is used, places tubing into pump mechanism and sets to prescribed rate)							
13. Inserts tip of feeding container tubing into NG tube and tapes securely. Unclamps NG tube							
14. Opens clamp on tubing and adjusts flow to prescribed rate							
15. For a **continuous feeding** with a pump, adds more fluid to bag when empty							
16. Checks rate and flow periodically and adjusts if needed							
17. When **single feeding** is completed (bag empty), clamps feeding bag tubing and pinches or clamps NG tubing. Disconnects feeding container tubing							
18. Makes feeding like mealtime: Young children may suck on a pacifier							
19. Flushes NG tube with _____ cc's water							
20. Clamps and/or caps NG tube							
21. Makes sure NG tube is secured							
22. Keeps child in feeding position for at least 30 minutes after completing feeding							
23. Cleans and stores feeding container and tubing							
24. Washes hands							
25. Documents feeding and observations in log							
26. Reports any problems to parents							

Checklist content approved by:

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Parent/Guardian Signature Date

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Ventilator Assisted Care Program
Children's Hospital, New Orleans, LA

CVL Dressing Change
Skills Checklist

Child's Name:_____

Person Trained:_____

Position:_____ Instructor:_____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
A. States name and purpose of procedure.							
B. Preparation:							
1. Reviews Universal Precautions							
2. Identifies catheter placement exit site, etc.							
3. Identifies CVL catheter type and parts							
4. Identifies where procedure is done (respects privacy)							
5. Identifies potential problems and appropriate actions							
C. Identifies Supplies:							
1. Dressing kit:							
Alcohol swabs							
Povidone iodine swabs							
Povidone ointment							
Sterile gauze							
2. Mask							
3. Sterile gloves							
4. Transparent dressing							
5. Spare clamp							
6. Catheter cap							
D. Procedure:							
1. Washes hands							
2. Assembles Equipment							
3. Explains procedure to child							
4. Puts on mask							
5. Positions child for procedure							
6. Arranges equipment							
7. Removes wet or soiled dressing							
8. Inspects exit site							
9. Puts on sterile gloves							
10. Cleanses skin with alcohol swabs 3 times and allows solution to dry 30 seconds							
11. Cleanses skin with povidone swabs 3 times and allows povidone to dry about 30 seconds							
12. Dries skin with sterile gauze							
13. Applies povidone ointment to site							
14. Places sterile gauze over ointment							
15. Covers gauze with transparent dressing							
16. Secures catheter with tape							

Child's Name:_____

CVL Dressing Change
Skills Checklist

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
17. Disposes of gloves and supplies appropriately							
18. Washes hands							
19. Documents procedure and problems							
20. Report any problems to parents							

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Heparin Lock Flush
Skills Checklist

Child's Name: _____

Person Trained: _____

Position: _____ Instructor: _____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
A. States name and purpose of procedure.							
B. Preparation:							
1. Completes at _____ time(s)							
2. Reviews Universal Precautions							
3. Identifies where procedure is done							
4. Identifies potential problems and appropriate actions							
C. Identifies Supplies:							
1. Heparinized saline of prescribed concentration							
2. 3 ml syringe with a 21-23 gauge needle							
3. 2 alcohol swabs							
4. Adhesive tape							
5. IV catheter and male adaptor							
D. Procedure:							
1. Washes hands							
2. Assembles equipment							
3. Explains procedure to child							
4. Cleanses top of heparinized saline container with alcohol							
5. Draws prescribed dose of heparinized saline into syringe							
6. Cleanses male adaptor hub with alcohol swab							
7. Slowly injects dose of heparinized saline into hub							
8. Removes syringe/needle without dislodging IV catheter							
9. Disposes of syringe and needle in appropriate container							
10. If problems with injection, inspects IV site and removes IV catheter if infiltrated							
11. Reinforces dressing, if needed							
12. Washes hands							
13. Documents procedure and problems							
14. Reports any problems to parents							

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Male Catheterization
Skills Checklist

Child's Name:_____

Person Trained:_____

Position:_____ Instructor:_____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
A. States name and purpose of procedure.							
B. Preparation:							
1. Completes at _____ time(s) (In emergency complete earlier than later)							
2. Completes where _____ (Consider privacy and access to bathroom)							
3. Position for catheterization:							
4. Identifies body parts:							
a. Scrotum							
b. Foreskin							
c. Meatus							
d. Glans							
5. Identifies potential problems and appropriate actions							
C. Identifies Supplies:							
1. Type of Catheter							
2. Lubricant							
3. Urine receiving pan							
4. Cleaning material							
D. Procedure:							
1. Washes hands							
2. Gathers equipment							
3. Positions child for catheterization							
4. Arranges equipment for procedure							
5. Puts on clean gloves							
6. Lubricates catheter and places on clean surface							
7. Cleans:							
a. Prepares cleaning materials							
b. Retracts foreskin (if needed)							
c. Holds penis at right angle from the body							
d. Pulls penis straight							
e. Cleans meatus and glans							
f. Uses swab only once							
g. Wipes a minimum of 3 times							

Child's Name:_____

Male Catheterization
Skills Checklist

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
8. Grasps catheter about 4 inches from tip							
9. Inserts well lubricated catheter into penis with consistent pressure (if muscle spasm occurs, stop momentarily and then again use slow even pressure). NEVER FORCE A CATHETER							
10. When urine begins to flow, inserts 1/2 inch more							
11. Allows urine to flow by gravity into the shallow pan or toilet							
12. Child-Specific: If ordered, gently presses bladder to help empty							
13. Removes catheter slowly when urine stops flowing							
14. Stops and waits until all urine stops flowing							
15. Dries and dresses							
16. Washes equipment and puts used catheter in home container							
17. Documents procedure in observation log							
18. Reports any problems to parents							

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Children's Hospital, New Orleans, LA

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Female Catheterization
Skills Checklist

Child's Name:_____

Person Trained:_____

Position:_____ Instructor:_____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
A. States name and purpose of procedure.							
B. Preparation:							
1. Completes at _____ time(s) (In emergency complete earlier rather than later)							
2. Completes where _____(Consider privacy and access to bathroom)							
3. Position for catheterization:							
4. Identifies body parts:							
a. Labia Majora							
b. Labia Minora							
c. Meatus							
d. Position of Urethra							
5. Identifies potential problems and appropriate actions							
C. Identifies Supplies:							
1. Type of Catheter							
2. Lubricant							
3. Urine receiving pan							
4. Cleaning material							
D. Procedure:							
1. Washes hands							
2. Gathers equipment							
3. Positions child for catheterization							
4. Arranges equipment for procedure							
5. Puts on clean gloves							
6. Lubricates catheter and places on clean surface							
7. Cleans:							
a. Prepares cleaning materials							
b. Opens labia minora & majora							
c. Cleans from front of folds to back of meatus							
d. Uses swab only once							
e. Wipes a minimum of 3 times							
8. Grasps catheter about 3 inches from tip							
9. Inserts into urethra until urine begins to flow							
10. Advances 1/2 inch more							

Child's Name:_____

Female Catheterization
Skills Checklist

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
11. Allows urine to flow by gravity into shallow pan or toilet							
12. Child-Specific: If ordered, gently presses on bladder to help empty							
13. Removes catheter slowly when urine stops flowing							
14. Stops and waits until all urine has drained if urine begins to flow again during removal							
15. Dries and dresses child							
16. Washes equipment and puts used catheter in home container							
17. Documents procedures and observations in log							
18 Reports any problems to parents							

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Colostomy Care
Skills Checklist

Child's Name:_____

Person Trained:_____

Position:_____ Instructor:_____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
A. States name and purpose of procedure.							
B. Preparation:							
1. Reviews Universal Precautions							
2. Completes at _____ time(s)							
3. Identifies where procedure is done (consider privacy and access to bathroom)							
4. Position for ostomy care:							
5. Identifies possible problems and appropriate actions							
C. Identifies Supplies:							
1. Soap and water							
2. Soft cloth or gauze							
3. Skin preparation							
4. Adhesive							
5. Clean bag							
6. Belt, if needed							
7. Scissors and measuring guide							
8. Clean gloves							
9. Adhesive tape, if needed							
D. Procedure:							
1. Washes hands							
2. Assembles equipment							
3. Explains procedure to child and encourages participation							
4. Puts on gloves							
5. Empties contents of bag before removal, if ordered							
6. Removes used bag							
7. Washes the stoma area							
8. Inspects skin for redness/irritation							
9. Dries stoma and skin							
10. Places skin barrrier around stoma							
11. Applies adhesive to bag or removes backing from adhesive							

Child's Name:_____

Colostomy Care
Skills Checklist

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
12. Centers new bag over stoma							
13. Presses bag firmly against skin barrier to prevent leaks							
14. Disposes of used bag in appropriate receptacle							
15. Removes gloves and washes hands							
16. Documents procedure and problems							
17. Reports any problems to parents							

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Ileostomy Care
Skills Checklist

Child's Name:_____

Person Trained:_____

Position:_____ Instructor:_____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
A. States name and purpose of procedure.							
B. Preparation:							
1. Reviews Universal Precautions							
2. Completes at _____ time(s)							
3. Identifies where procedure is done (consider privacy and access to bathroom)							
4. Position for ostomy care:							
5. Identifies possible problems and appropriate actions							
C. Identifies Supplies:							
1. Soap and water							
2. Soft cloth or gauze							
3. Skin preparation							
4. Adhesive							
5. Clean bag							
6. Belt, if needed							
7. Scissors and measuring guide							
8. Clean gloves							
9. Adhesive tape, if needed							
D. Procedure:							
1. Washes hands							
2. Assembles equipment							
3. Explains procedure to child and encourages participation							
4. Puts on gloves							
5. Empties contents of bag into toilet before removal, if ordered							
6. Removes used bag							
7. Washes the stoma area							
8. Inspects skin for redness/irritation							
9. Dries stoma and skin							
10. Places skin barrier around stoma							
11. Applies adhesive to bag or removes backing from adhesive							
12. Centers new bag over stoma							

Child's Name:_____

Ileostomy Care
Skills Checklist

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
13. Presses bag firmly against skin barrier to prevent leaks							
14. Disposes of used bag in appropriate receptacle							
15. Removes gloves and washes hands							
16. Documents procedure and observations							
17. Reports any problems to parents							

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Children's Hospital, New Orleans, LA

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Urostomy Care
Skills Checklist

Child's Name:_____

Person Trained:_____

Position:_____ Instructor:_____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
A. States name and purpose of procedure.							
B. Preparation:							
1. Reviews Universal Precautions							
2. Completes at _____ o'clock							
3. Identifies where procedure is done(consider privacy and access to bathroom)							
4. Position for ostomy care:							
5. Identifies possible problems and appropriate actions							
C. Identifies Supplies:							
1. Soap and water							
2. Soft cloth or gauze							
3. Skin preparation							
4. Adhesive							
5. Clean bag							
6. Belt, if needed							
7. Scissors and measuring guide							
8. Clean gloves							
9. Adhesive tape, if needed							
10. Container to clean/store bag							
11. Disinfectant solution to clean used bag							
D. Procedure:							
1. Washes hands							
2. Assembles equipment							
3. Explains procedure to child and encourages participation							
4. Puts on gloves							
5. Empties contents of bag into toilet before removal							
6. Removes used bag							
7. Washes the stoma area							
8. Inspects skin for redness/irritation							
9. Dries stoma and skin							
10. Places skin barrier around stoma							

Child's Name:_____

Urostomy Care
Skills Checklist

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
11. Applies adhesive to bag or removes backing from adhesive							
12. Centers new bag over stoma							
13. Presses bag firmly against skin barrier to prevent leaks							
14. Attaches belt, if used							
15. Disposes of used bag in appropriate receptacle							
16. Removes gloves and washes hands							
17. Documents procedure and problems							
18. Reports any problems to parents							

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Ventilator Assisted Care Program
Children's Hospital, New Orleans, LA

Oxygen Cylinder
Skills Checklist

Child's Name:_____

Person Trained: _____

Position: _____ Instructor:_____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
A. States name and purpose of procedure.							
B. States PRECAUTIONS.							
C. Identifies Supplies:							
1. Oxygen cylinder with key.							
2. Oxygen regulator.							
3. Flow meter.							
4. Delivery device with oxygen tubing.							
5. Humidifier, if needed.							
D. Steps:							
1. Prepares tank and regulator.							
2. Turns tank on.							
3. Checks pressure in tank.							
4. Estimates amount of time tank will last.							
5. Connects delivery device and humidifier (if needed) to cylinder.							
6. Adjusts flow to prescribed LPM.							
7. Provides oxygen to child using prescribed delivery device.							
8. Monitors PSI, flow and time while tank is in use.							
9. Monitors child for hypoxemia while oxygen is in use.							
10. Turns tank off before turning flow meter off, when tank is no longer needed or must be changed.							
11. Stores tank safely.							

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Oxygen Liquid System
Skills Checklist

Child's Name:_____

Person Trained:_____

Position:_____ Instructor:_____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
A. States name and purpose of procedure.							
B. States PRECAUTIONS.							
C. Identifies Supplies:							
1. Liquid oxygen system.							
2. Delivery device with oxygen tubing.							
3. Humidifier, if needed.							
D. Steps:							
1. Prepares unit.							
2. Checks level of fluid.							
3. Connects delivery device and humidifier to liquid system.							
4. Adjusts flow to prescribed LPM.							
5. Provides oxygen to child using prescribed delivery device.							
6. Monitors flow while in use.							
7. Monitors child for hypoxemia while oxygen is in use.							
8. Monitors level of the liquid daily.							

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Oxygen Concentrator
Skills Checklist

Child's Name:_____

Person Trained: _____

Position: _____ Instructor: _____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
A. States name and purpose of procedure.							
B. States PRECAUTIONS.							
C. Identifies Supplies:							
1. Oxygen concentrator.							
2. Flow meter.							
3. Delivery device with oxygen tubing.							
4. Humidifier, if needed							
D. Steps:							
1. Checks filter.							
2. Turns concentrator on.							
3. Tests power failure alarms.							
4. Connects delivery device to concentrator with oxygen tubing.							
5. Adjusts flow to prescribed LPM.							
6. Provides oxygen to child using prescribed delivery device.							
7. Monitors flow while in use.							
8. Monitors child for hypoxemia while oxygen in use.							

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Go Bag Supplies
Skills Checklist

Child's Name:_____

Person Trained:_____

Position:_____ Instructor:_____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
A. States name and purpose of procedure.							
B.. Identifies use of each essential supply:							
1. Resuscitator Bag.							
2. Extra trach with ties and obturator.							
3. Syringe (3cc).							
4. Saline vials.							
5. Suction catheters.							
6. DeLee suction catheter.							
7. Bulb syringe.							
8. Portable suction machine.							
9. Blunt scissors.							
10. Tissues.							
11. Water soluble lubricant or saline							
12. Passive condensor.							
13. Emergency phone numbers.							
14. Go Bag list.							
15. Other.							
C. Demonstrates plan for checking emergency supplies							

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Ventilator Assisted Care Program/CIP, Children's Hospital, New Orleans, LA 70118 (1987)

Tracheostomy Care
Skills Checklist

Child's Name: _____

Person Trained: _____

Position: _____ Instructor: _____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
A. States name and purpose of procedure.							
B. Identifies Supplies:							
1. Trach tie or trach tube holder							
2. Hydrogen Peroxide							
3. Cotton tipped applicators							
4. Tracheal gauze or sponges							
5. 3 clean containers							
C. Steps:							
1. Assembles supplies							
2. Washes hands thoroughly							
3. Positions child							
4. Removes old trach gauze or sponges from the trach							
5. Cleans stoma with hydrogen peroxide and cotton swabs							
6. If trach with inner cannula, removes inner cannula. Inserts sterile inner cannula and locks in place							
7. Replaces old trach ties or holder with a new one							
a. Holds flange, cuts old ties and removes ties or holder							
b. Replaces used ties or holder with clean							
c. Ties ends securely with double knot or secures holder							
8. Cleans removed inner cannula:							
a. Soaks inner cannula in peroxide and cleans with a small brush, pipe cleaners or cotton swabs							
b. Rinses with tap water, soaks in 70% denatured, clear alcohol for 20 minutes							
c. Rinses with sterile water, shakes dry and stores							

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Ventilator Assisted Care Program
Chronic Illness Program
Children's Hospital, New Orleans, LA 70118

Suctioning
Sterile Technique
Skills Checklist

Child's Name:_____

Person Trained:_____

Position:_____ Instructor:_____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
A. States name and purpose of procedure.							
B. Identifies Supplies:							
1. Suction machine with tubing.							
2. Sterile catheter kit							
3. Saline.							
4. Cup of tap water.							
5. Resuscitator bag							
C. Steps:							
1. Assembles supplies.							
2. Washes hands.							
3. Turns on suction machine and checks for function.							
4. Opens package and removes kit.							
5. Opens kit without touching inside.							
6. Removes glove by holding inside of cuff and pulling glove over other hand.							
7. Picks up catheter bag and removes catheter using gloved hand.							
8. Attaches top of catheter to suction tubing.							
9. Uses resuscitator bag with dirty hand to give 3-5 breaths.							
10. Inserts catheter into trach tube without suction.							
11. Advances catheter to end of trach tube or until child coughs.							
12. Applies suction by putting thumb on suction catheter adapter .							
13. Twirls catheter between fingers as it is pulled out of trach tube, staying in no more than 10 seconds.							
14. Gives 3-5 breaths with resuscitator bag after catheter has been removed from trach tube.							
15. Repeats suctioning in above order (10-14) until secretions are removed.							
16. Places drops of saline or prescribed rolution in trach tube (if secretions are thick), follows with extra breaths, then suctions.							
17. Suctions nose and mouth with same catheter the same way.							
18. Completes suctioning, disconnects catheter from suction tubing, wraps catheter around gloved hand and pulls glove off inside out.							
19. Rinses suctioning tubing with tap water.							

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Suctioning
DeLee Technique
Skills Checklist

Child's Name:_____

Person Trained: _____

Position: _____ Instructor:_____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
A. States name and purpose of procedure.							
B. Identifies Supplies:							
1. DeLee Catheter.							
2. Saline.							
3. Resuscitator Bag.							
C. Steps:							
1. Assembles supplies.							
2. Washes hands.							
3. Gives 3-5 breaths with resuscitator bag.							
4. Inserts catheter into trach without suction.							
5. Advances catheter into the end of trach tube or until child coughs.							
6. Applies suction by placing mouth on adapter and sucking in breath.							
7. Twirls catheter between fingers as it is pulled out of trach tube, staying in no more than 10 sec.							
8. Gives 3-5 breaths with resuscitator bag after suction catheter has been removed from trach tube.							
9. Repeats suctioning in above order (Steps 4-8) until secretions have been removed.							
10. Cleans DeLee Catheter.							

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Suctioning
Bulb Technique
Skills Checklist

Child's Name:_____

Person Trained: _____

Position: _____ Instructor:_____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
A. States name and purpose of procedure.							
B. Identifies Supplies:							
1. Tracheostomy tube one size smaller.							
2. Emergency phone number list.							
C. Steps:							
1. Assembles supplies.							
2. Squeezes bulb syringe for TRACH, places tip in trach tube and releases.							
3. Removes bulb syringe from trach tube.							
4. Squeezes and releases bulb into tissue, expelling secretions.							
5. Repeats steps 2-4 until secretions are removed.							
6. Squeezes bulb syringe for MOUTH/NOSE, places tip in mouth/nose and releases.							
7. Removes bulb syringe from mouth/nose							
8. Squeezes and releases bulb into tissue, expelling secretions.							
9. Repeats steps 6-8 until secretions are removed.							
10. Cleans bulb syringes.							

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Suctioning
Nasal and Oral Technique
Skills Checklist

Child's Name:_____

Person Trained: _____

Position: _____ Instructor:_____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
A. States name and purpose of procedure.							
B. Identifies Supplies:							
1. Suction machine with tubing.							
2. Catheter.							
3. Cup of tap water.							
C. Steps:							
1. Assembles supplies.							
2. Washes hands.							
3. Turns suction machine on and checks function.							
4. Removes catheter from storage bag being careful not to touch the last 5 inches of catheter.							
5. Attaches catheter to suction tubing.							
6. Inserts catheter into nose and advances until child coughs without suction.							
7. Applies suction when child coughs and withdraws catheter while twirling catheter.							
8. Puts a few drops of normal saline into nose to thin out secretions (if they are thick).							
9. Repeats suctioning in this order (6-8) until nose is clear.							
10. Suctions mouth by advancing catheter into mouth without suction.							
11. Applies suction and withdraws catheter while twirling.							
12. Repeats suctioning in above order (10-11) until mouth is clear.							
13. Disposes of or cleans catheter.							
14. Rinses tubing with tap water.							

Checklist content approved by:

_____ _____

Parent/Guardian Signature Date

Ventilator Assisted Care Program/CIP, Children's Hospital, New Orleans, LA 70118 (1987)

Respiratory Emergencies
Accidental Removal of the Tracheostomy Tube
Skills Checklist

Child's Name:_____

Person Trained: _____

Position: _____ Instructor:_____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
A. States name and purpose of procedure.							
B. Identifies Supplies:							
1. Emergency phone number list.							
2. Spare tracheostomy tube with ties or holder attached and obturator.							
3. Lubricant - jelly or saline.							
4. Blunt scissors.							
5. Suction supplies.							
C. Steps:							
1. Describes recognition of problems:							
a. Respiratory distress.							
b. Finding trach tube out of trachea.							
c. Apnea monitor alarm.							
d. High pressure alarm (ventilator).							
e. Low pressure alarm (ventilator).							
2. Preparation and prevention:							
a. Has spare tube with child always.							
b. Posts emergency numbers.							
c. Answers alarms promptly.							
d. Keeps trach tube midline and straight.							
e. Knows CPR.							
3. Action.							
a. Removes old tube & replaces with spare tube (see Trach changes).							
b. Assesses child.							
c. Calls for emergency help, if needed.							

Checklist content approved by:

_____ _____

Parent/Guardian Signature Date

Ventilator Assisted Care Program/CIP, Children's Hospital, New Orleans, LA 70118 (1987)

Respiratory Emergencies
Difficulty with Trach Tube Insertion
Skills Checklist

Child's Name:_____

Person Trained:_____

Position:_____ Instructor:_____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
A. States name and purpose of procedure.							
B. Identifies Supplies:							
1. Tracheostomy tube one size smaller.							
2. Emergency phone number list.							
C. Steps:							
1. Describes recognition of problems:							
a. Tube does not fit easily in stoma.							
b. Stoma closing.							
2. Preparation and prevention							
a. Is thoroughly trained.							
b. Positions child properly.							
c. Has spare tube one size smaller than child's present size.							
d. Posts emergency numbers.							
e. Knows CPR.							
3. Action:							
a. Acts calmly and reassures child.							
b. Checks for proper positioning.							
c. Spreads the stoma.							
d. Waits to exhalation.							
e. Uses smaller size tube.							
f. Calls for emergency help if needed.							

Checklist content approved by:

_____ _____
Parent/Guardian Signature Date

Ventilator Assisted Care Program/CIP, Children's Hospital, New Orleans, LA 70118 (1987)

Respiratory Emergencies
Blocked Tracheostomy Tube
Skills Checklist

Child's Name:_____

Person Trained: _____

Position: _____ Instructor:_____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
A. States name and purpose of procedure.							
B. Identifies Supplies:							
1. Spare tracheostomy tube with ties or holder attached and obturator.							
2. Water soluble lubricant or saline.							
3. Blunt scissors.							
4. Suction supplies.							
C. Steps:							
1. Describes recognition of problems:							
a. Respiratory distress.							
b. Air will not go into lungs with a rescuscitator bag.							
c. Suction catheter will not pass through trach tube.							
d. Apnea monitor alarm.							
e. High Pressure alarm (ventilator).							
2. Preparation and prevention							
a. Has spare tube with child always.							
b. Has emergency supplies with child always.							
c. Posts emergency numbers.							
d. Keeps trach humidified properly.							
e. Keeps up routine trach changes.							
f. Always answers alarms properly.							
g. Knows CPR.							
3. Action:							
a. Asks child to cough.							
b. Puts several drops of saline in trach, gives breaths, suctions.							
c. Changes trach if pediatric tube.							
d. Replaces inner cannula with spare, if adult trach tube.							
e. Changes entire tube if breathing difficulty continues after inner cannula is replaced.							
f. Calls for emergency help if needed.							

Checklist content approved by:

_____ _____

Parent/Guardian Signature Date

Ventilator Assisted Care Program/CIP, Children's Hospital, New Orleans, LA 70118 (1987)

Respiratory Emergencies
Aspiration
Skills Checklist

Child's Name:_____

Person Trained: _____

Position: _____ Instructor:_____

	Demo Date	Return Demonstration Date	Date	Date	Date	Date	Date
A. States name and purpose of procedure.							
B. Identifies Supplies:							
1. Suction supplies.							
2. Emergency phone number list.							
C. Steps:							
1. Describes recognition of problems:							
a. Seeing child "breathe in" food, liquid or vomitus.							
b. Seeing signs of aspiration - coughing, choking, turning blue.							
2. Preparation and prevention							
a. Keeps suction catheters and saline with child always.							
b. Uses caution when feeding.							
c. Turns child's head to side and is sure trach tube opening is covered if vomiting occurs.							
d. Posts emergency numbers.							
e. Knows CPR.							
3. Action:							
a. Suctions immediately							
b. Puts several drops of sterile saline in tube; suctions again.							
c. Gives several breaths with resuscitator bag after using several drops of sterile saline.							
d. Repeats suctioning.							
e. Notifies physician.							
f. Calls for emergency help if needed.							

Checklist content approved by:

_____ _____

Parent/Guardian Signature Date

Ventilator Assisted Care Program/CIP, Children's Hospital, New Orleans, LA 70118 (1987)

Summary of Skills Training and Recommendations

Date _____ Instructor _____ Person Trained _____

Strengths of Trainee: _____

Weaknesses of Trainee: _____

Recommendations for follow-up and further training: _____

_____

Recheck Recommended: _____

****

Date _____ Instructor _____ Person Trained _____

Strengths of Trainee: _____

Weaknesses of Trainee: _____

Recommendations for follow-up and further training: _____

_____

Recheck Recommended: _____

****

Date _____ Instructor _____ Person Trained _____

Strengths of Trainee: _____

Weaknesses of Trainee: _____

Recommendations for follow-up and further training: _____

_____

Recheck Recommended: _____

Ventilator Assisted Care Program/CIP
Children's Hospital, New Orleans, LA 70118
1987

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Other Suggested Reading

The following references provide a general overview of the topic of children with chronic illnesses and technology-dependence.

Several excellent bibliographies have been written for parents and professionals regarding the impact of chronic illness on the family and community. One source for bibliographies is:

Federation for Children with Special Needs
312 Stuart Street
2nd Floor
Boston, Massachusetts 02116
(617) 482-2915. Voice TDD

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